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BIBLICAL ANTIQUITY OF MAN. REV. S. LUCAS. F.G.S



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THE

BIBLICAL ANTIQUITY OF MAN;

OR,

Man not Older than the Adamic Creation.

BEING A CONSIDERATION OF
HIS BIBLICAL, ARCHÆOLOGICAL, AND GEOLOGICAL HISTORY,
AND DESIGNED TO MEET THE THEORIES
RESPECTING MAN'S ORIGIN AND GREAT ANTIQUITY
ADVOCATED IN
RECENT GEOLOGICAL WORKS AND PAPERS.

BY THE

REV. S. LUCAS, F.G.S.,

AUTHOR OF "CREATION REDEMPTIVE," "SERMONS ON THE MYSTERY OF GODLINESS," ETC., ETC.

"When a phenomenon is general and repeated under the same conditions, as has been the case in the filling up of the longitudinal and vertical fissures of calcareous rocks, such a phenomenon must have been produced by a cause as general as the effects which group around it. According to this double condition, which is presented in all caves where remains of animals of geological date are found, it is impossible to attribute it to any other cause than to violent inundations."—Humboldt.

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PREFACE.

In writing the following work, the author has carefully endeavoured to avoid all speculation. Where they appear to be well established, he has accepted all the facts which geologists have derived from our cave and superficial gravel and loess deposits. These he regards as indisputable, and is fully persuaded that no theory can be true that would deny or ignore them. The flint and other implements are the work of man, and, in the general sense explained in this work, the authors of these implements were unquestionably cotemporaries of the extinct, as well as the still existing, mammalia, whose remains are found embedded along with his own. But some of these remains may be from two to three thousand years older than others. Man and extinct animals were contemporaneous, in the sense that they all belong to one epoch. But some of the remains may

belong to the beginning, and others to the close of that epoch. It is in this general sense that we regard man as a cotemprary of the mammoth, the mastodon, the cave bear and hyæna, of the primitive ox, and other extinct mammalia.

But in thus accepting the established facts of geology, we are giving no sanction to the theories respecting man's origin and great antiquity advocated in recent geological works and papers. Such theories, we have endeavoured to show, are not supported by the facts, and that they fail to solve the facts. To give even a plausible character to the theories, their authors are obliged to invoke into existence causes of which there is no decisive evidence, and against the existence of which there is a strong probability. Torrential floods, in limited areas, rivers flowing one hundred feet higher than our present ones, and unequal changes of depression and upheaval, are doubtful elements mingling in all the theories in question, giving an ominous uncertainty to such theories, and which, when added to the

imperfect solutions which they, after all, supply of the complicated facts to be accounted for, render such theories unworthy of acceptance.

But the causes thus invoked, and invoked in vain on natural principles, very plainly pointed to the well authenticated biblical deluge as amply and surely supplying them. The torrential action of water contended for almost in every case as the main agent in filling fossiliferous caves, or in reassorting their contents, and for depositing and again denuding our superficial gravels and fine overlying inundation mud, seemed to point, as with an unerring finger, to the close of the antediluvian period, when all the fountains of the great deep were broken up, and when the windows of heaven were opened to pour down upon the earth its forty days and forty nights of torrential rain.

Thus geologists themselves supplied us with a key to what we believe to be the true solution. Admitted the action of the antediluvian epoch, and the action of the deluge as closing and consummating that epoch, and we have all the causes demanded by the theories which we oppose, minus the time which they require, and can thus bring all the geological phenomena for which so great an antiquity is claimed within the Mosaic period.

Such is the task attempted in this work. The verdict of our failure or success we must leave for others to pronounce.

Longton, 1866.

INTRODUCTION.

THE Divine origin of man, and his history on the earth, the subjects which we propose to discuss in the following pages, must at all times be important and interesting; but from their special adaptation to its circumstances, they are doubly so; at the present time. vestigations having reference to them are now prosecuted with the utmost zeal; and theories and speculations, based on such investigations, are both rife and abundant. Evidences bearing on man's origin, on the antiquity of his race, on his physical and mental development, on his social condition, on his attainments in mechanical skill, and on the relation of his various races, are now, by many anxious inquirers, eagerly sought; and neither time nor effort is spared to collect Ancient languages, and words in those languages supposed to be more ancient than the languages themselves, ancient and modern mythologies, national traditions, every accessible archæological record, and fossil remains of man, found in the diluvial gravels of valleys, and in the caves and fissures of rocks,— are all anxiously consulted for the purpose of obtaining information and solving problems respecting man's past history upon the globe.

Then all this eager search seems mainly directed to the attainment of one object. The evidence supplied by the "flint implements," and by the bones of man and of extinct animals, found in our valley gravels and cave deposits, would appear to be principally sought and valued, because it is supposed to enable us to carry back man's first introduction on the earth to a dim and distant past, compared with which, the few thousand years of our longest chronological systems are but as vesterday. Archæologists, ethnologists, and men of eminent geological attainments and fame, with ruthless hand and ardent zeal, are endeavouring to push back the ancient boundaries of belief, and to extend the human epoch to periods of fabulous length and duration. According to theories which now seem to be in the ascendant, and for which is demanded our implicit belief. man of some race or origin, and his cotemporary gigantic mammalia, roamed over the plains of the earth, and was, with his remains, interred in its gravels and caves, hundreds of thousands of years ago. Since his appearance on the globe, some distant nebulæ may have been half resolved, or periods may have passed away of so great a duration, that if the number of years could be put in figures, the mind would refuse to grasp their immensity.

Now we do not complain of the zeal thus put forth, but we sometimes feel compelled to question its motive, and seriously to demur to some of the conclusions to which it would push us. So far, indeed, as Divine

truth is concerned, we confess that we feel no fear as to what may be the result of such investigations. However skilfully and determinately it may be assailed, we tremble not for the ark of our God, nor are we afraid of being rifled of the priceless treasures of celestial truth which it contains. For periods more or less prolonged, inquiry may be misdirected, speculation may be pushed beyond all legitimate bounds, isolated and doubtful facts may be pressed into the service of theories which seem to be inimical to the authenticity of Heaven's own oracle; in the prosecution of inquiries where it alone is competent to decide, the information which that oracle supplies may be ignored, and out of such materials men may construct a chronological chain reaching back to an antiquity which the Bible can never warrant us to concede; but, as in times past, the reaction will come,—the reaction, not of truth, but of theory; not of fact, but of speculation; a reaction connected with and preceded by, a more textual and enlightened interpretation of the Bible: while, from amid this ebb and flow of human opinion, the truth of the Divine word, like a rock of adamant in the midst of the foaming billows of the ocean, will only stand out in bolder form, and with more impressive and commanding majesty.

Hence, what we deprecate is not inquiry; is not the most diligent and laborious research; is not the careful and industrious collection of evidence bearing on man's past history and origin; nor yet the *fearless* assertion of really ascertained facts: for, in the long-run, this

can do nothing but good service to the cause of truth; and, although it may somewhat modify previous views, and may sweep away some theological opinions once held sacred, yet it is sure to lead to a more careful and minute study of the Divine history, and, as the result of this, to a firmer, because more enlightened conviction of its truth. Instead, therefore, of deprecating inquiry respecting the matters in question, we would earnestly urge it. But we do deprecate, and deprecate most fervently, all rash conjecture; bold theorising; systems built on no better foundation than "it may be," assertions of the great antiquity of man which rest on only a few meagre facts; confident assumptions which stand greatly in need of better proof; attempts to put down opponents who doubt many things that are taken for granted, by sneers and ridicule, where nothing but the most vigorous demonstration ought to satisfy; and all speculations which ignore the biblical history of man, and which studiously shut out the light of that history: all this we most assuredly deprecate, and have the utmost reason to do so.

But, on the other hand, we as fervently deprecate all bold and senseless denial of geological fact and of legitimate geological deduction; all crude and unscientific theories offered in pretended explanation of them, and all attempts to foist into the sacred pages of the Bible, the unphilosophical and foolish vagaries of some of its would-be advocates. All this, and everything kindred to this, we most earnestly deprecate; and as

believers in the surpassing wisdom, as well as in the perfect truth of Holy Scripture, against all this we firmly protest. Such modes of meeting opponents are highly injurious to the sacred cause of truth, and, as far as their feeble influence can do it, inflict a grievous wrong, both on the enlightened advocates of science, and on the lofty intelligence embodied in the pages of the Book of God. With just indignation we spurn all such so-called defences of Scripture truth, and utterly disown all fellowship of sentiment with their authors. We believe, indeed, that they cannot be too zealously nor too unsparingly denounced. We do not hesitate to sav that such crudities and vagaries as are sometimes dubbed with titles, such as "Systems of Scripture Geology," "The Sacred Steps of Creation," etc., are a disgrace, we do not say to the sacred cause of Truth, for that cause has little or nothing to do with them, but to those whose names they bear, and are justly deserving of the utter contempt with which scientific men treat them. The devout and enlightened reader and believer of the Bible may well pray to be delivered from such dubious friends of its truth. At any rate, until they have more fully qualified themselves for the discharge of their self-imposed task, both science and religion will do unspeakably better without their services.

It is not that we quarrel with attempts to reconcile the different departments of truth; to harmonize, for example, geology, or any other science, with Scripture. On the contrary, when conducted with care, and without prejudice, and by persons who are in a good degree, at least, competent to the task; and when due regard is paid to all the facts of the case, and when nothing is attempted to be deduced from these facts but strictly legitimate inference, we regard such attempts as laudable, and respectfully submit that they cannot fail to be productive of good. This, indeed, is the only way ultimately to arrive at the whole truth involved in any subject of inquiry. Let solutions of difficulty and the reconciliation of apparently opposing facts be sought in this way, and in this spirit, and the result must be beneficial.

But this is not the case. Often, on both sides, denial is substituted for argument, and assumption supplies the place of evidence. Advocates of the Bible deal too freely in dogmatic assertion, or unthinking opinion; while speculators on man's origin and antiquity frequently exclude from their inquiries a large portion of the most important evidence bearing on these points. It is of this that we complain. Let both sides look at the whole truth. Let the friends of the Bible candidly admit all the facts of science, and respectfully treat all its legitimate deductions; but on the other hand, we have a right to ask our scientific men, to weigh the evidence, and to receive the established facts of the Whether as geologists or archæologists, our Bible. scientific explorers have an undoubted right to search for every evidence, and to collect every fact they can, which bears on man's past history, and from these facts

to determine, as far as possible, the length and circumstances of that history; but when they farther proceed to speculate on man's origin, distribution, and antiquity, then, if they wish to arrive at a sure and unprejudiced conclusion, they are bound to admit into the inquiry all the evidence bearing upon it; and, if they do not, what is to prevent their conclusion from being a false one? To ignore the Bible, which alone professes to give authentic information on these subjects, is, we submit, neither fair nor philosophical, and is to be guilty of the very rashness and narrow-minded one-sidedness which many scientific inquirers are ever ready to charge on the advocates of Divine truth. If the dim and flickering light of national tradition, the scarcely discernible truths wrapped up in systems of mythology, and the uncertain echoes of ancient languages, are so eagerly sought in support of speculations respecting the origin and antiquity of man, is it candid,—is it to act in the spirit of a true and really enlightened lover of truth, to shut out the testimony of a Book, which, altogether overlooking the fact of its inspiration, is the oldest, and unspeakably the most authentic and rational of all books? If he sincerely wishes to arrive at a safe and satisfactory conclusion on these grave and inexpressibly important questions, is not the inquirer bound to admit every evidence and every testimony and from every quarter; that can assist him in arriving at that conclusion? To conduct such inquiries as if there were no such book as the Bible in existence, and as if it furnished no sort of testimony respecting them, is, on the part of our scientific men, a sad and gross departure from their professed and often boasted philosophical candour.

To say that as merely scientific inquirers, they have nothing to do with the Bible in the matter, is really to assert, that they are at liberty to conclude respecting the subject under investigation on partial evidence; and that they are competent to decide on matters of fact, when they have purposely excluded a most important witness in the case? If from facts supplied by the remains of man, found in valley gravels and in the deposits of caves, scientific men must proceed to speculate on the origin and antiquity of his race, then at this point, the information, professed to be given on these subjects by the Bible, becomes an essential element in the inquiry; and such information cannot be excluded without altogether vitiating the conclusion said to be arrived at. These may seem strong, but we are sure that they are just and logical deductions; and although they may be denied, they cannot, we are persuaded, be disproved.

Impressed, then, with these views, in penning the following pages, it will be the anxious endeavour of the writer to avoid all mere dogmatic statement, all garbling of facts, all mere theories, and all doubtful and unwarranted deductions, and throughout the discussion, to give a calm consideration both to biblical statement and to scientific fact.

He is well aware both of the difficulty and gravity of the task which he has undertaken, and how unequal he is to perform it in a way worthy of the dignity and moment of the themes which it embraces. With many other duties ever pressing upon him, and having constantly to meet the demands of an intelligent congregation, the writer has not at command either the time or the means for that extensive research, and for that comprehensive collection and collation of facts which he regards as most desirable, if not absolutely necessary, for the satisfactory performance of a work so difficult as the one here attempted. Still, to shield himself against any consequent charge of rashness in the matter, he may be permitted to remark that, in addition to personal observation, he has, from the first. endeavoured carefully to read, and calmly to consider, all the published geological and archæological facts having any reference to the past history of man. But, after all, in treating on a subject so difficult and comprehensive, and where, from the conflicting evidence, there is room for so great a variety of opinions, he feels that much real modesty is demanded, and that adverse conclusions deserve, at least, a respectful treatment.

The writer confesses to no sympathy with the self-importance and self-complacency which has at its command a large store of contemptuous and reproachful epithet, by which to stigmatize the views and theories that stand opposed to its own, and which finds it a much easier and more agreeable task to cry, in re-

ference to hostile opinion, "Foolish, absurd, superficial, mere myth," than, in the spirit of calm and sober inquiry, and by patient and well-sustained argument, to refute and disprove what is deemed erroneous. Such weapons he leaves to those who need them, and who, to blind us to the grave shortcomings of their own performances, endeavour to make us believe that all have erred except their distinguished We desire to cherish a contrary spirit, and to pursue a different course, in the present inquiry. subject so vast and complicated,—where there is necessarily so much that seems doubtful, and so much that does not appear to square with any theory, -and where, at present, facts are so few, and seem to point to opposite conclusions,—in such a subject, modesty is surely indispensable, and, to cherish a contrary spirit, must greatly tend to unfit any person for the performance of the task of duly considering it.

In the following discussion it is proposed to consider, in order, the Biblical, Archæological, and Geological History of Man; the discussion having a special reference to theories now prevalent respecting the origin and antiquity of the human race, and the phenomena on which such theories profess to be based.

CHAPTER I.

THE BIBLICAL HISTORY OF MAN.

In this chapter we propose to consider man's origin, the unity of his race, his distribution and antiquity before the flood, his destruction by the flood, and the subsequent repeopling of all the earth by the nations descended from the family of Noah.

SECTION I.

THE SCRIPTURAL ACCOUNT OF MAN'S ORIGIN.

The subjects to be discussed.—The inquiry a practical one.—The Biblical origin of man.—To the question, Whence is man? Nature gives no response.—Objections to man's Divine origin.—No authoritative account but the biblical one.—The confessed mystery of man's origin places the subject beyond the province of philosophy.—Excuses of men of science.—These met.—Bound to consult the Bible, or deny its truth.—Scripture statement not false.—The mistakes our own.—The truth not feared for.—The Mosaic account of man's creation.—This in agreement with all subsequent statement on the subject.—Man's creation the direct work of the Godhead.—Every other theory mere speculation.—Tradition and profane history silent on the subject.

In every point of view this is an inquiry of the greatest importance, and cannot easily be over-estimated. It is not a merely speculative one, on the determination of which no consequences hinge, and from which no momentous results can follow. It belongs, in the highest degree, to the class of practical subjects, and cannot be wrongly decided without clashing with all the distinctive doctrines of Scripture, and without overthrowing all the best interests and hopes of our race.

For the present we shall discard from the inquiry all speculative views and philosophical theories on the subject, and, for the most part, confine ourselves to the biblical account of man's origin. This, indeed, forms the only authentic, and, we believe, the only rational account on this important subject. In fact, we are not aware that any other authentic account is pretended in the case. If so, where is that authentic account recorded? What nation has preserved, or pretends to have preserved, such an account? In what archive has it been kept concealed? On what ancient tablet or monument has it been found inscribed? Or in what form has any other origin been sculptured, or by what hieroglyphic has it been symbolised? It will not, we imagine, be contended, that the dreams of pagan nations, or the extravagant and often irrational speculations embraced in their systems of mythology, or the dim and often contradictory traditions handed down to them from their forefathers—supply such a record. And, if not, then where shall we search for it? All authentic profane history is silent on the question, or but doubtfully moots it. The heathen themselves generally disdain every origin—except a Divine one. It is in the Bible, and in the Bible alone, that all rational and authentic account is found. This is a point on which we earnestly insist. "The mysterious problem of man's origin," by which philosophy is so greatly perplexed, and which science has so long vainly endeavoured to explain, is solved nowhere else. Deprived of this scriptural solution, we are left in dark uncertainty; and might be drifted hither and thither according to the changing theories of every clever speculator.

To the all-important question, Whence is man?

Nature gives no response; nor will any of her laws. however minutely questioned and elaborately analysed, account for his origin, or direct us to the knowledge of his parentage. The various theories, which, through a prolonged series of changes, would trace him up to inorganic matter itself, or to some "primordial form." lack, we honestly believe, the very semblance of truth, and have nothing to recommend them to our acceptance. save the name and authority of their authors. To say nothing about the utter impossibility of a moral nature. and of a sense of responsibility to some supreme power, being derived from any kind of material organism, man's physical structure itself belies the grovelling origin sought to be claimed for him, and places him, even as simply an organized being, in a position of isolated dignity—a single species of a single genus. That man-nobly erect, and exquisitely constructed, and beautifully shaped and proportioned man-has been developed from an ape or gorilla, or that he has attained to his present distinguished perfection of form and structure by the operation of some mysterious "law of natural selection," are speculations that have this grave defect, that they lack all clear and decisive proof. That there are general laws of organization, and general forms of structure, that link man with the inferior creatures, and produce a sort of general resemblance between him and them, we not only admit, but fully believe; but this does not prove his development from them, nor any partial relationship with them, but only the unity

of the Divine Creator's works, and that man and the inferior creatures have all proceeded from the same Infinite First Cause, and have been fashioned by the same Almighty hand.

Then we remind the opponents of man's Divine origin, that general laws do not link things together by succession and descent only, but as general laws. In fact, we confess ourselves unable to conceive of general laws of organization essentially differing from each other. Hence, however clearly demonstrated, such a general relation between man and the inferior animals as is shown to exist, can prove nothing with regard to the point in debate. Mere general likeness is not identity, and can never prove that there has been the same origin, and a descent from the same parentage. general resemblance is not sameness, nor can it ever be demonstrated that it originated in sameness. Just as we see is the case in the present epoch, similar forms may long run parallel with each other, and be related, not by descent or development, but by general laws of structure and functions of being.

With the exception, therefore, of that contained in the Divine oracles, we are, as yet, without any authentic and rational account of man's origin. To demand our belief in any other origin than that assigned in sacred Scripture, on the grounds which science and philosophy are seeking to supply, would be to demand it on grounds that are ever changing, and which are, therefore, most questionable; and on grounds which, when compared

with that which the Bible supplies, is the very fulness of uncertainty. And, we would ask, where is either the wisdom or the advantage of pursuing this important inquiry, independently of Divine revelation? We do not denounce, nor do we fear for the ultimate result of any merely physical inquiry. Even purely scientific investigation, when conducted with proper caution, and with due regard to the narrow limits of human knowledge. must ever be useful, and merits our commend-For the "Inductive Philosophy" of Bacon, we have a strong regard, and should like to see a stronger adherence to its spirit. But does not the confessed "mysteriousness of man's origin" place this subject beyond the reach of mere philosophy altogether; and subject those who are seeking for a philosophical solution of the "mystery," to the solemn challenge and overwhelming rebuke which the Almighty addressed to the patriarch Job? At any rate, why grope in what seems no better than utter darkness, in search of a priceless gem, when there is near at hand the full blaze of supernatural light, and the direction of an unerring guide? Why consult only the dumb statue, or the unintelligent automaton, when the living oracle itself has clearly spoken, and given its infallible decision? Should we not conclude that there was some strange perverseness in the person who persisted in searching "the dust of the earth" for materials to solve problems, which could only be solved by an intelligent survey of "the lights of heaven," and the measure of their

heights and depths? If sincerely and honestly anxious to solve the question—the momentous and mysterious question of man's origin—why, when pursuing this grave inquiry, do our philosophers leave out of the investigation the *only* information on the subject that claims to be authentic? Why do they close their eyes to the only light that clearly and steadily shines on the question, and seek its solution amid ancient skulls and the limited experience of half a generation? If, when considering one of the gravest problems that has ever engaged the attention of man, they wilfully leave out the element most important and necessary to its right solution, where is their boasted philosophical candour, and their vaunted love of truth?

If their only object be to amuse themselves, to indulge their love of speculation, and to ascertain what unaided human intelligence can achieve in the matter, let them tell us so, and we will leave them to speculate on, and earnestly turn ourselves to the more momentous questions of man's destiny, and his recovery from moral evil; but if they are in earnest to solve the question, and to settle it on a sure foundation, then, as honest men, and as professed lovers of real science and of genuine philosophy, they are bound to embrace and consider the whole evidence bearing on the subject, and to come to no conclusion but the one in harmony with that evidence.

Nor will it do for them to stave off this conclusion by telling us that, as men of science, and as only pro-

fessing to investigate physical phenomena, they have nothing to do with the Scriptures in the matter; their only object is to collect facts, to investigate their nature, to arrange and classify them, and then, according to the principles of the Baconian philosophy, to draw their conclusions accordingly. We reply, Very well. we have to ask, Are all nature's facts which bear on the question of man's origin collected? Are they all within the reach of philosophy, to be collected at all by her hand? Have no facts bearing on the subject disappeared? Were there not once some facts, perhaps contrary ones, of which they can now find no trace? Then, can they reassemble on the scene all the causes by which the facts on which they rely were produced, and can they refer each separate fact to its own cause? If not, then, in this state of utter uncertainty, are they competent to come to any conclusion at all in the matter? Then, further, in a question which so fully comes within the scope of its own information, is not the account given in the Bible one of the most important facts in the case; and can we safely speculate on the question, and come to a satisfactory conclusion upon it, when a fact so essential has been excluded from the inquiry?

Such are some of the questions which we would earnestly press on the attention of those who tell us that, as mere scientific inquirers, they have nothing to do with the teaching of the Bible. We say nothing about their own responsibility in the case. We appeal

to them on scientific and philosophical grounds alone; and on these grounds contend, that if they speculate on the subjects respecting which the Bible professes to have already spoken, they are bound, either to disprove the truth of the Bible, or else, on the ground of its Divine authority, to admit its statements among the facts from which their conclusions are drawn. Did they confine themselves to the collection and classification of the facts of nature, and to obvious and simple inferences from those facts, we could have no reason to complain; all this they have a right to do, and are competent to do; but when they further proceed to investigate questions so remote and uncertain, and so little connected with the present state of things, as are the origin and antiquity of man, then we seriously demur to the correctness of the assertion—that they have nothing to do with the teaching of the Bible; and feel that we have a philosophical, as well as a scriptural right, to protest against any conclusion that is come to, unless that conclusion is based upon the whole evidence of the case.

Nor is there any mode of escape from this reasoning, except by denying the Divine authority and truth of the Bible altogether. If, of course, they can prove that the Bible is a book utterly unworthy of credit, that its statements are mere "myths," and that it consists of the fabrications of priestcraft, or the mere exaggerations of oriental fancy, why, then the case will be entirely altered. They will then be at perfect liberty.

to discard its testimony, and to form their conclusions without any reference to its teaching; but the question recurs. Have they done this? Are the cogent proofs and manifold evidences for the truth of Holy Scripture, -proofs and evidences which, like some impregnable bulwark, have hitherto withstood every attack made upon them, and which, by their force and clearness, have commanded the intelligent homage of men of the highest mental power, and of the widest philosophic attainment,—are all these proofs and evidences demolished, either by unfaithful ecclesiastic, or by infidel might and If so, then how are we to account for the continued faith of tens of thousands in the Divine authority of its truths,-of tens of thousands, as lofty in their intellect, as wide in their grasp of thought, as manly in their independence, as gifted and varied in their attainments, and as ardent in the love of philosophic truth, as are the most distinguished and talented devotees of mere science? The only admissible solution of this fact is, that that faith has its foundation in intelligent conviction,—and in a conviction that has been produced by a prolonged and searching examination of the clear and manifold evidence by which the truth of the Bible is proved. No fact of profane history is supported by evidence at all comparable to that which learned men have collected in support of the truth of the Bible.

And let it not be hastily assumed, that even admitting its general truthfulness, and the inspiration of its doctrines, yet that there are false statements in it, that

its writers have committed historical and scientific blunders, and that there is much in the Bible that is only human, and which therefore we are at liberty to reject. Are we-is the most clever person living-a competent judge in the case? Are not the mistakes with which we are so ready to charge the writers of Scripture our own mistakes? Did we know all the facts and circumstances to which the statements in question relate, and on which they are based, is it not highly probable that we should come to a different conclusion? We need not remind the thoughtful reader that the earlier portions of the Bible especially present us with history in its most condensed form. Thousands of the events which occurred must have been left without a place, and without a mention. Had all these been related, together with the persons and circumstances, is it not highly probable that all difficulty and apparent discrepancy would be removed?

These are questions which we do not here profess to examine; but the impugners of Holy Scripture are bound both to examine and to determine these questions, before they are in a position, with any fairness, to assume that there are errors and misstatements in the word of God. And until this is done, we shall feel ourselves not only at liberty, but compelled to conclude, that with the exception of the obvious mistakes of transcribers, and the corruption of numerals and figures, the Bible contains the truth of God, and was all given to man by the inspiration of His Spirit.

But if so, then it will follow that the only way of escape from the conclusion which we urge is cut off. The Bible which formally and distinctly professes to acquaint us with the origin of man, is a true, because it is a Divine history—a faithful record of facts by an infallible authority. Hence we cannot but regard it as in the highest degree unfair, and, in fact, as utterly unphilosophical, to attempt to conclude any investigation respecting the origin of man, without any regard being paid to its statements, and without any consultation of its testimony. No other light, however dim and shadowy it may be, is excluded from the inquiry: why this? On what singular ground, for what recondite reason are we to exclude the light—the sure, and we do not hesitate to add, the unerring light of Divine Does its sacredness, its very connection with man's Maker and Judge, who is "the Truth," does this alone make its testimony unworthy of notice, and deserving of exclusion? Shall all the doubtful utterances of man, as merely echoed from ancient language, from mythological systems, and from national tradition, be eagerly pressed into the inquiry, and be anxiously made the most of? And are the utterances which are proved to have come from the eternal Wisdom, to be banished from all consideration, and to be deemed irrelevant and out of place? Shall we industriously scrape together a few grains of sand wherewith to turn the scale in our favour, and yet leave out the massive orb of truth, and the ponderous system containing the oracles of heaven?

We do not urge this point because we have any apprehension that were the investigation carried on apart from the Bible, and independently of its testimony, that a conclusion hostile to its statements would be reached. Such investigations have already been pursued, and pursued by persons who were eminently qualified to conduct them; and the result has been a full confirmation of Scripture truth. (See the works of Drs. Pritchard, Latham, Wilson, and others).

THE MOSAIC ACCOUNT OF MAN'S CREATION.

We shall now proceed to state and review what the sacred Scriptures affirm respecting the origin of the human race. How widely do the statements of these Divine oracles differ from the speculations of men! The account is thus introduced in the first chapter of Genesis:--" And God said, let us make man in our image, after our likeness. So God created man in His own image, in the image of God created He him; male and female created He them. And God blessed them, and said unto them, Be fruitful, and multiply, and replenish the earth, and subdue it. And the Lord God formed man out of the dust of the ground, and breathed into his nostrils the breath of life, and man became a living soul. And the Lord said, It is not good that the man should be alone; I will make him a help meet for him. And the Lord God caused a deep sleep to fall upon Adam, and he slept: and He took one of his ribs, and closed up the flesh thereof: and the rib which the Lord God had taken from the man made He a woman, and brought her to the man. And Adam said, This is bone of my bone, and flesh of my flesh: she shall be called woman, because she was taken out of man."

Then we have this account substantially repeated in the fifth chapter of the same book. Solomon, too, distinctly asserts "that God made man upright." Then the statements of the New Testament on the subject are equally clear and explicit. Thus Paul affirms:— "And hath made of one blood, all nations of men to dwell upon the face of the earth; and hath determined the times before appointed, and the bounds of their habitation. For in Him we live, and move, and have our being: as certain also of your own poets have said, For we are also His offspring." And in other parts of both the Old and New Testaments there is frequent reference to the same important facts.

Such is the account which the Bible supplies respecting man's origin. Taken altogether, it most distinctly and positively asserts man's direct formation by the Divine Creator, and also the unity of his race.

Man's creation was a direct act on the part of the Godhead, the beautiful outward frame given to him,—his present exquisite anatomical and physiological structure, and the skilful adaptation of all his members to their purpose, which we now admire,—all this constituted the "primordial form," the grand original type of the genus and species man, which "God made or

created out of the dust of the ground." And He made the race entire—" male and female created He them." And, to secure the closest unity, He made the woman from the man. No previous organised form is supposed or implied in the case. Man does not appear on the stage of the world as the result of some prolonged progression, of some inexplicable law of "development," or of "natural selection." No claim of descent or parentage is made on behalf of the ape or the baboon. His origin is not traced back through epochs of "strife," not through the stronger and more perfect varieties descended from the inferior creatures, which, through a triumphant struggle for the means of existence with the older and feebler offspring, have taken their place: but he comes at once on to the scene that has so long been preparing for him, directly formed by a Divine hand, not the descendant, but as at once the lord and the head of all the creatures that preceded him. mediate creation is affirmed in the most definite terms, and is a fact which is most distinctly and emphatically taught in every reference which the sacred Scriptures make to the subject. There is not a hint, nor even the shadow of a hint, to favour any other hypothesis. far as the biblical history is concerned; any other assumption must be perfectly gratuitous. Indeed, we are not aware that any Scripture testimony has been alleged in proof of any other hypothesis. That testimony is found to be uniformly opposed to any theory that would rob man of the dignity which that testimony

asserts for him. When, therefore, it is attempted to prove man's descent from some other and inferior order of creatures, it is always upon other grounds that the attempt is made. The biblical account, as being hostile to the end sought, is always purposely excluded from the inquiry. The fact is, it could not be pressed into it without at once *foreclosing* the discussion. Its testimony, if it were listened unto, would be fatal to the cherished hypothesis, and therefore it must be ignored, or the falsehood of its account respecting man's Divine creation be adroitly taken for granted.

We shall not now stay to consider the theories referred to; but until these advocates have proved the mythological character of the Bible, or its mere human authorship, and have disproved its authenticity and truth, we shall feel compelled to regard all such theories as nothing but speculation, and as most fully warranted to affirm that the biblical account of man's direct creation by Jehovah, is the only one possessing the slightest claim to our intelligent reception.

Nor do we recollect to have seen the testimony of profane history, or of national tradition, pretended in the case. A resemblance between the physical structure of man and that of the inferior animals, or some general likeness of organization between them, is, as far as we are aware, the only basis on which the theories in question are based. A slender foundation, truly, on which to plant the mighty battery of argument that is to assail and storm the citadel of heaven's own eternal

truth. Surely wise and candid men would pause before they, on such grounds, permitted themselves to embrace and advocate theories which bring them into direct collision with the positive declarations of a book that *Divinely* claims to determine the point in dispute, and to give the only true account of man's origin! Which record ought rational and thinking man to believe—the mere speculations of philosophy, or the simple authoritative statements of the volume of Divine revelation?

SECTION II.

THE UNITY OF THE HUMAN RACE.

The unity of the human race affirmed in Scripture.—Man—unlike the brute creatures—peopled the earth from one centre.—The biblical account remarkable for its simplicity.—That account is throughout consistent.—Human theory inconsistent and contradictory.—The biblical history widely contrasts with such theories.

In the biblical history, this is as clearly asserted as is man's Divine origin. The oneness of his creation is affirmed in the most absolute terms. True, the brief history that is given to us on the subject in the book of Genesis, does not in so many words expressly assert that no human beings existed before the Adamic creation; but this important fact is most clearly implied, and is unquestionably taken for granted. The Divine command given to the first Adamic pair, to multiply, and to replenish the earth, and to subdue it, most evidently supposes that it was not, either wholly or in part, replenished with some human race already. this language points to any conclusion, it is, that as yet the earth—the newly restored earth—was unpeopled by man. In this respect, the language applied to man is altogether singular. No such command to replenish the earth, and to subdue it, is given to any inferior order of creatures. On the contrary, the language emploved in reference to all the inferior animals, as well as with regard to vegetation, would seem clearly to imply, that everywhere the earth and sea were made to bring them forth simultaneously, and also in large numbers. At the Divine command, each locality of the globe would therefore at once become peopled with the plants and animals to whose nature and wants it was adapted. In both cases, an emigration of species, more or less limited, would doubtless afterwards take place, but not in a sense so wide and unlimited as has taken place in the case of man. No creature but man, and the few domestic animals benignly designed to minister to his wants, and to assist him in subduing the earth, seem adapted to every locality and climate, or to be capable of adapting themselves to them. And, accordingly, man alone is commanded to replenish the earth, and to subdue it. He alone goes forth from one centre, to people and to possess all lands.

This fact would of itself furnish a strong presumptive evidence in favour of the unity of the human race. Not that we are left to mere inference in the case. On the contrary, the unity of the human family is expressly affirmed. In the passage already quoted, it is distinctly declared that God hath made of one blood, of one stock, "all nations of men, to dwell upon the face of the earth." We do not see how the unity of the human race could be asserted in clearer and stronger terms, nor in terms that could be more exclusive of any opposite sense. "All nations, all nations of men, and all

nations of men to dwell upon the face of the earth, are made of one blood." If this language does not utterly exclude all other human dwellers upon the face of the earth, then no language can do it. It precludes absolutely—if language can be made to preclude anything—every other possible supposition in the case. The theory that the nations of men who dwell upon the face of the earth have sprung from several original stocks, differing from each other in type and structure, is here expressly contradicted. To assert, therefore, that they have thus sprung, is to come in direct collision with Scripture denial. It is, in short, to make structural differences, which can be otherwise easily accounted for, the basis of conclusions, in palpable antagonism with biblical truth and declaration.

Supported, then, by these and kindred considerations, we feel ourselves fully warranted to take the important fact of the unity of the human race for granted, and to reason upon it, and to draw our conclusions accordingly.

But, ere dismissing the subject, its gravity demands that we offer a few observations respecting the peculiar character of the biblical account.

That account is remarkable for its simplicity. In this respect, how widely and favourably does it contrast with all the theories that are opposed to it. As compared with it, how cumbrous and how utterly fanciful are the speculations, which, through differences of anatomical structure and of cranial development, would trace up mankind to a manifold and diversified original type! Then the question recurs. Were the several original pairs directly created, or were they developed from inferior animals, or were they formed by the operation of some law of "natural selection"? And if in either of the latter modes,—did they, by some strange good fortune, all arrive at the stage of physical and mental development deemed worthy of the name and position of man, at one and the same time, or when Providence, if a Providence is admitted in the case, had determined the time of their simultaneous or successive habitation? In fact, the speculations in question embrace so great a crowd of difficulties and complications, and require so many adjustments, and are so utterly intangible and perplexing, that it is with a feeling of infinite relief that we turn away from them all, to the simple, unique, and beautifully clear account which man's Maker has Himself given of the work of His own hands. That the so-called several types or races of mankind have descended from some half-dozen species of monkey, is a speculation too puerile, too foolish, and too degrading, for any sane man really to believe and advocate. Did the Bible utter such puerilities, or sanction such baseless speculations, we might then have some good ground to question its truth, and to demur to its conclusions. As compared with its simple utterances and godlike majesty of statement, all such speculations sink beneath the lowest contempt. What, though vaunting in philosophic garb, and emblazoned with lofty titles, must be the mental degradation, or the moral perversity, that can prefer these grovelling imbecilities to the rational and manly statement which even a heathen could appreciate and reutter—that "we are the offspring of God"! Wretched indeed, and shadowy and degrading in the extreme, are the theories which men would have us to substitute for the simple and authentic history of our Bibles. In fine, weighed in the scales of reason and probability, the biblical account has in its favour an infinite preponderance.

Then, we have further to remark, that the biblical account of man's origin is throughout consistent. account is thoroughly consistent with itself, and each renewed and separate statement of it, as given in each part of Scripture, is consistent with all the rest. It is thus obvious that the account is entirely and simply one. And here, too, we find a striking contrast to all human theories. If there were any real or anything like conclusive evidence for any other origin of man than the scriptural one, how comes it to pass that theories on the subject are so numerous and contradic-Real evidence—evidence that was at all deserving of our confidence—would lead men, if not to absolutely identical, vet certainly to harmonious con-Evidence that was at all clear and decisive in clusions. its character, could never warrant, and therefore would not lead to, conclusions that were adverse to and destructive of each other. Hence, it will clearly follow, from the numerous and contradictory theories prevalent on the subject, that no such evidence exists, or that it has not been discovered, and thus, that as yet the conclusions are mere speculation.

How widely different is the position in which the account given to us in the inspired oracle stands! all the repeated and varied statements which it contains respecting the origin of man, there is not the slightest element of inconsistency, much less of contradiction. From the beginning of the book of Genesis to the end of that of Revelation, not one of the numerous authors of Scripture has let slip a single expression, or uttered a single statement, that does not fully agree with the original account found recorded in the first pages of the Bible. What but absolute truthfulness can account for such unbroken consistency in a record reaching through the period of a thousand years? Had any merely human tradition descended to us, accompanied with so much consistency, how eagerly would it have been embraced; and, if of a hostile character, how vauntingly would it have been paraded against the truth of the Bible! But we have no such human tradition, nor any tradition whatever, that does not, like the Bible, point to the one origin of the human race,—the origin announced in the Divine oracles.

SECTION III.

The Bible does not absolutely determine the antiquity of man.—This subject considered apart from its geological bearing.—The uncertainty and confusion of the so-called biblical chronology.—This has nothing to do with the truth and inspiration of Scripture.—The date of man's creation, probably, purposely left uncertain.—It is so left.

In the prosecution of our design, we now proceed to observe that the Bible does not absolutely determine the antiquity of man, or the number of years that have elapsed since his creation.

In assuming this ground we do it advisedly. We would not wilfully come into collision with the cherished views of good men, but *truth*, and the service of truth, are with us more sacred and important things than any merely human consideration.

At present we shall endeavour to consider this grave subject apart from any of its geological bearings. We wish as much as possible to come to the question unbiassed by any geological theories respecting the antiquity of man. Should we be able to show, from the Bible itself, that "the day in which God created man upon the earth" may be carried some thousands of years farther back in past time than is generally supposed, we shall then be in a position to grant to geolo-

gists a longer period for the production of the changes, on the ground of which they are alleging so great an antiquity for man. We do not of course expect to find in the Bible any warrant for the enormous antiquity which some writers are now claiming for him, and in the sequel we shall see that this is unnecessary.

But our present object is to show that the Bible itself does not absolutely fix the date of man's creation. All that it affirms is, that it was at the beginning of the present epoch, and dates from the commencement of the existing flora and fauna. And I need not remind the intelligent reader, that the Divine authority of the Bible is in no direct way connected with our present systems of biblical chronology. Whether these systems are true or false does not at all affect the question of the Divine inspiration of the sacred Scriptures. systems themselves are utterly unharmonious, widely diverge from each other: a conclusive proof that the data on which they profess to be based is neither clear nor decisive. According, indeed, to the opinion of our biblical critics, in nothing has the Bible suffered so much from change, and from the mistakes of transcribers, as it has in its dates and numbers. fact, owing to these and similar causes, the chronology of Scripture, and especially of its earlier histories. appears to be thrown into inextricable confusion: and hence the endless disputes of the authors of different chronological systems.

In reading, some years ago, a long discussion on this

subject that appeared in the pages of the "Quarterly Journal of Sacred Literature," I could come to no other conclusion than that the whole matter was hopelessly uncertain, and as a proof of this, in his "Scripture Chronology," Kennedy affirms "that some three hundred different opinions might be collected as to the length of time that elapsed between the creation of man and the Incarnation of Christ." Then, as is well known by all who have paid any attention to the subject, there is the same discrepancy between the different texts and versions of the sacred Scriptures themselves. Thus, according to the Samaritan text or version, the period from the creation to the deluge was only 1307 years; according to the Hebrew text 1656 years; while according to the Vatican copy of the Septuagint, and to Josephus, the period was 2265 and 2262 years.

Thus, between the lowest and highest of these calculations there is the grave difference of nearly a thousand years. How uncertain must be the data which leads to results so widely different! Nor are the modes of calculation adopted more satisfactory. At every step in the process, elements of uncertainty are present and inseparable. Even were everything else clear and satisfactory, it would be granting too much to suppose that we are sufficiently acquainted with the ancient modes of calculating time to arrive at any certain result as to the date of man's creation. But, overlooking this fact, how are we to be certain that the number of years assigned to each antediluvian patriarch is the real one?

To the age of many of them, the ancient Septuagint version adds one hundred years, and in this way gains over the original Hebrew text nearly a thousand years. Then, is it not probable that names, deemed by the Divine Spirit unworthy of record, are omitted from the list, and the grandson called the son of the preceding patriarch. It is well known that the Hebrew words, bar and bain, a son, admit of this latitude of meaning. And, recollecting all this, and also the very condensed, and therefore fragmentary, character of the history given of man before the flood, we need not be surprised if our longest chronological systems are found to be too short, and that geology should demand a greater antiquity for man than any of them teach.

And we again assert that these results have nothing to do with either the truth or the inspiration of the sacred Scriptures. Hence, if it can be clearly proved that man has been on the earth for ten or more thousand years, we can see nothing in the Bible that such a conclusion would contradict. Such now are, and such have long been, our convictions on this subject. Nowhere does the Bible itself profess to state the number of years that man has been on the earth. Has its Divine author purposely left the matter unsettled, to exercise at once man's humility and man's intellectual diligence? Be this as it may, it is so left; and, whatever may be the real date of man's creation, by this very uncertainty we are freed from any fear of any direct contradiction between the deductions of science

and the testimony of the Divine oracles. So long as Divine revelation fixes no date, and determines no question of man's antiquity, there can be no direct contradiction between its statements and "the established findings of science."

SECTION IV.

The biblical considerations which render it probable that man's antiquity is much greater than the chronological systems indicate.—The authorities differ nearly one thousand years.—Facts and statements of Scripture imply a greater antiquity.—Events occurred requiring a greater antiquity.—Nations and kingdoms mentioned, who could only have grown into such in a much longer period of time.—The same uncertainty and difference between the flood and Abraham, as before the flood.—Man's antiquity probably greater by some thousands of years than has generally been supposed.—This conclusion not arrived at hastily.—Is believed to be the true one.—We would attempt to mend our systems of chronology.—This a hopeless task.

In the preceding section we have endeavoured to show that the Bible does not absolutely fix the date of man's creation.

We now proceed to remark, that there are several considerations suggested by the Bible itself, which render it highly probable that the *antiquity* of man is much greater than that embraced in our longest chronological systems.

To some of these considerations we have already briefly referred,—considerations which showed that a longer time than is generally supposed, must have elapsed between the creation of man and his destruction by the flood: and it is a remarkable fact, that there exists almost as much uncertainty as to the number of years that transpired between the deluge and the birth of the patriarch Abraham. Thus, according to the Hebrew text, the time from the flood to the seventieth year of Terah, the father of Abraham, was only 292 years. According to the Samaritan text, it was 942 years; according to the Alexandrian copy of the Septuagint, 1172 years; and according to Josephus, 1002 years.

To balance these discrepant accounts, and to determine which is the most probable, is a task which we leave to our chronologists. We only bring them forward for the purpose of showing that, so far as biblical data is concerned, we are when speculating on the antiquity of man left considerable latitude.

Nor is this the only evidence that speaks in favour of our position. There are, further, in the Bible itself, facts stated, and various circumstances and events hinted at, that to make them consistent and probable, require a much greater amount of time than that allowed by our longest systems of chronology. We do not see how the different nations mentioned in connection with the history of the patriarch Abraham,—nations both of Shemite and Hamite origin, evidently branches and subbranches from the parent stock,—we do not see how these nations, in the short space of three hundred years, could have attained to so high a state of national organization and development of resources and number as the account given of them implies that they possessed. Even the longest period, of about twelve hundred years,

seems too short for nations sprung from the greatgrandson of Ham to have attained to the degree of national growth and social organization, which must be allowed to the peoples who are made to pass before us in the brief and synoptical account given to us in the sacred history.

We have only, indeed, calmly to consider what is said respecting the kings of Egypt and of "the Plain," of the confederate kings overthrown by Abraham and his Canaanite allies, and the brief glances given us of nations "strong and mighty," mentioned by Moses as peopling the lands afterward inhabited by the Edomites, the Moabites, the Ammonites, and others, and to look at all the implied circumstances, in order to be convinced that long periods of time must have elapsed between the date of the flood and the call of Abraham. the descendants of sub-branches of the families of the three sons of Noah could have multiplied and spread themselves over such wide areas of the earth, and have there grown up into kingdoms, called, by the unerring Spirit, "great and mighty and terrible," in the space of even a thousand years, does not seem at all probable.

Nor must we, in reviewing the period in question, lose sight of the events said to have occurred during it. We regard these as important elements in the inquiry. It must, for example, have been long after the flood that the men settled in the plains of Shinar deemed themselves sufficiently numerous and strong to undertake the building of the tower of Babel. Then from

that event to the time of Abraham, when the families dispersed, in consequence of the confusion of tongues, had grown up into numerous considerable kingdoms, another long period is necessarily implied. Nations, sprung from the grandsons of a single family, do not grow up into nations great and mighty in a few centu-Take any family of three sons, and even under the most favourable circumstances for the increase of population, how long would it be before the descendants of such a family could multiply and spread so as to form some forty considerable kingdoms? Nor let it be objected that they were mere clans. On the contrary, it is clear that Egypt had become thickly populated. Then it is said that the nations of the Emim. Zamzummim, Anakim, and Rephaim, mentioned by Moses, and of which Miss Fanny Corbaux has given so interesting an account in the "Journal of Sacred Literature," were "strong and mighty." As is shown by Manetho, the Egyptian historian, as well as by inscriptions and figured monuments, these nations maintained a long and fierce struggle with the Egyptians, and long reigned over them; and that, when at last they were conquered and expelled by the nation they had invaded and subdued, they still numbered 240,000 persons. And if so many of these shepherd kings were found in the land of Egypt after the close of a fierce struggle, what must they have numbered in their own lands? These brief scriptural hints, in which biblical statement so remarkably harmonizes with profane history, and with existing monumental evidence, give no support to the notion of mere clanship. Sacred Scripture itself informs us that nations had grown up into mighty kingdoms, had flourished, and had, with the exception of a few individuals, disappeared again, and were succeeded by other large nations, descended from the Edomites and others, before Joshua led the children of Israel into the promised land. Surely, for all this to transpire, ages must be allowed,—ages, which from these brief and rapid glances of nations in aggression, in protracted conflict, and rising and passing away, gleam out upon us as from some geological formation, which, in a long succession, exhibits the accumulation of layer upon layer, and demanding for its deposition some thousands of years.

We have no wish to lay undue stress on these facts, still we cannot but feel that such considerations—considerations in which Scripture and secular evidence so wonderfully harmonize with each other, require us greatly to extend the period which elapsed between the deluge and the time of the patriarch Abraham.

Nor are the ages subsequent to Abraham so clearly defined and settled as to leave no room for the insertion of additional years. Even the vulgar date of the Christian era is supposed to be too short by some four years. And if, with regard to an event comparatively so recent, that has absorbed so much attention, and respecting which we have so many writings and histories, there could be a mistake of even only four years, then, during the period from Abraham to Christ, whole centuries

may have been lost. It is needful, also, to bear in mind the fact, that the reigns of the Israelitish kings were counted only by the whole years of their respective reigns. Then, with regard to the number of years set down for each reign, there is the same room for mistake as we found in the previous period of the history of mankind. We must also remember that there were periods of confusion, and interregnums, leaving room for the lapse of many years more. Now, coupling all these facts and considerations together, we feel that we are hazarding no baseless assertion, and indulging in no mere conjecture, when we say that some thousands of years may reasonably be added to the antiquity assigned to man by our present chronological systems. Such a conclusion, at any rate, would do no violence to Scripture, and it would give far greater clearness and consistency to its brief hints and statements.

We have not arrived at these conclusions hastily, nor only with a view to meet the difficulties pressing upon us from the discoveries and deductions of science; we were led to form the same conclusion years ago, when endeavouring to consider and to form some definite conception respecting the person and history of Melchizedek, the illustrious monarch of the ancient Salem, and the relations in which that monarch stood to the surrounding nations, both of Hamite and Shemite origin. If, therefore, we are in error on the subject, we are so apart from any geological pressure, and on altogether independent grounds. The events

recorded, and the hints given in the Bible itself, first suggested to us the probability, and even the necessity, of longer periods of time than were generally supposed; and all further consideration on the subject has only tended to strengthen the conviction that such longer periods of time really elapsed.

We are aware that these conclusions bring us into collision with the generally received systems of chronology, and with the view which most divines and biblical interpreters entertain on the subject: but if they are false, it will be easy to refute them by over-turning the considerations on which they are based; but should they be true, and even if we have only succeeded in showing that they are highly probable, they are surely preferable to views, which, as we have seen, are not only grounded on uncertain and even contradictory data, but which would also bring us into direct collision with highly probable scientific truth. We feel satisfied that our views contradict no inspired facts, and that they are not inconsistent with any inspired statement. If so, where is that statement? By whom, and under what circumstances was it made? Until it is pointed out, we shall believe that no such statement exists.

If it be asked, Would you, then, try to mend our systems of chronology, and introduce here and there the periods supposed to have been lost? We at once reply, No. From the past disputes and theories of chronologists, we are persuaded that this is a perfectly hopeless task. We would, therefore, leave the date of

man's creation, and the subject of the antiquity of his race, where we devoutly believe the Divine author of Scripture has left them—undetermined. Had the certain knowledge of these facts been of vital importance, doubtless, like all other vital truths, they would have been accurately determined. And until it can be shown that they are thus determined, and until all the above facts and considerations are disproved, we shall feel ourselves at liberty, should the necessity really arise, to grant to geologists some thousands of years beyond what are embraced in our longest chronological systems; rather than that his sober and probable calculations should compel us to admit a denial between the records left by the past history of the globe, and the inspired records of the Bible. The two must really agree; and to us the above seems to be the best mode of reconciling them. If objectors will supply us with a better and more probable mode of reconciliation, they will have our best thanks, and will have yielded a most important service to the cause of truth.

SECTION V.

ON MAN'S DISTRIBUTION BEFORE THE FLOOD.

The distribution of man before the flood.—The biblical evidence.—Difficult to separate this from the archæological evidence.—During the longer period deduced from Scripture there was time for a wide distribution.—Perhaps greater facilities then existed for mankind spreading themselves.—The previous connection of lands.—The Bible sanctions this.—Division of the earth a physical one.—Scripture commands and warrants a wide dispersion.—The antediluvians did not only occupy the limited area assigned them by Hugh Miller and others.—Nothing gained by such admissions, nor by admissions of a partial deluge.—Objected—that there are no traces of such a wide distribution.—But are they not overlooked, or misinter-preted, or blended with other evidence?

This is the next point which this important discussion must embrace. As we are, for the present, only considering the biblical history of man upon the earth, we shall not, farther than is necessary, refer to the archæological and geological evidence bearing on the subject. In considerations like the one under review, it is, of course, difficult to separate them altogether; but we shall endeavour to do it as far as consistent with clearness of reference. We wish, as far as it is possible, to ascertain from the very brief and condensed history of the Bible itself, the probable extent to which mankind had been spread over the earth, before his race

was swept away by the deluge. In a history so short, so extremely synoptical, and so palpably fragmentary, we cannot, of course, expect to find anything beyond the merest hints on the subject. What could we learn respecting the past history of the present nations of Europe and of the peoples of the world, had all the events that have occurred for the last three thousand vears been condensed into two short chapters? with all the aids derived, both from sacred and profane history, and from a large amount of monumental evidence, we know comparatively little of the original distribution of the nations descended from the three sons of Noah; and, therefore, we need not wonder that from the records contained in a few brief chapters, we should be unable to learn anything very definite respecting the distribution of man before the flood. Still. there are a few considerations which will assist us to form, at the least, a probable conclusion on the subject.

And, in the first place, if we grant that only some three thousand years elapsed between the creation and the flood, there would be an amply sufficient amount of time for a wide distribution of mankind. During this period, when men lived to so great an age, and continued to "beget sons and daughters," they might spread themselves over the face of the earth to an extent of which we have never dreamed. If, at the time of Abraham, the descendants of Noah had multiplied into nations and kingdoms, then, even supposing that

there were no greater facilities for men to spread themselves before the flood, we might, from the time alone, infer a wide distribution of the antediluvian nations. In three thousand years they might so "multiply, and replenish the earth, and subdue it," that at the period when "the flood came and took them all away," the whole earth might be peopled with the Adamic race. Then in the record itself there is not anything to contradict such a supposition, or that is inimical to it.

Nor is this all. There might, before the flood, be greater facilities for men to replenish the earth. geologists are correct, great physical changes have taken place since man first appeared on the earth. and continents now divided by the depressed areas occupied by seas, may have then been connected together. Then, although most geologists believe the contrary, on astronomical and other grounds, some have supposed that, about the period of man's creation, the earth enjoved a higher and more even temperature than it has done since. And if so, there would be fewer obstacles in the way of man's wide dispersion. But be this as it may, the Scriptures themselves give great probability to the changes which geologists assert have taken place since man's existence on the earth. At the time when "the fountains of the great deep were broken up," and when the waters of the deluge subsided, and, subsequently, continents and large masses of dry land may have been rent asunder, leaving islands and channels, where primeval man and his contemporary animals once roamed and sported.

Nor is all this mere conjecture. The Bible itself tells us that the earth was thus divided in the days of Peleg. In the opinion of many divines, the expression refers to some physical division of the earth; and, all things considered, this opinion we believe to be the most probable one. Then France and England may have been severed, and Europe finally divided from Africa, leaving the English channel and the Mediteranean sea between them. We cannot, therefore, from the present physical structure and condition of the globe, judge what facilities the antediluvians possessed for fulfilling the Divine command "to replenish the earth, and subdue it." With a more direct connection between the principal masses of land, the human race might spread. themselves more rapidly and extensively than did the men after the flood,—occupying, at the time of their destruction, most of its continents and islands. Hence, should the sober and cautious deductions of science demand such a distribution of mankind in the antediluvian period, both in Europe and America, as well as Asia and Africa, then the above considerations warrant us in freely conceding the demand.

We need not now positively affirm that such a wide distribution of mankind had actually taken place at the period in question. Enough for our present purpose that such a distribution is possible and probable; that there is nothing unreasonable and extravagant in the

supposition; and that there is nothing in it that is inconsistent with the general scope and explicit statements of the sacred records.

But still it may be asked, Do those records give any countenance to the supposition? Is the language employed by the sacred historian in regard to the subject fitted to suggest such a rapid and wide peopling of the earth by the Adamic race? We believe that it is. the brief but graphic passages which he has penned, we have language expressive of unlimited extension. When reading them, and trying to realize their meaning, we seem to see the primal generations of men pushing forward in every direction, and subduing the earth to their dominion. Then such a rapid and wide distribution is both commanded and implied in the original designation: "And God blessed them, and said unto them, Be fruitful, and multiply, and replenish the earth, and subdue it." Here there is no limit set to the possession assigned, to the grant made, to the instruction expressed,—except the whole area of the globe itself. We have all the requisites in the case. The increase of numbers, the unceasing spread, and the actually acquired possession. In the beginning of the sixth chapter of Genesis, we are at once introduced into the midst of such a scene as the above passage suggests: "And it came to pass, when men began to multiply on the face of the earth." And again, "And the Lord said, I will destroy man whom I have created from the face of the earth." "And the earth was

filled with violence." If these passages do not absolutely teach that, at the time of the deluge, the Adamic race had peopled all lands, they at least prove that there is nothing in Scripture that is inconsistent with the supposition. At any rate, they by no means require us to believe that the human race was confined to a limited region around the mount of Ararat. They might at the time of the flood have occupied every habitable part of the globe. They multiplied on the face of the earth: they "filled the earth with violence."

That the antediluvian nations only occupied the limited extent of country assigned them by the late Hugh Miller, and by persons of his school, we have no reason whatever to believe. To reconcile the biblical account of the deluge with the opinions of geologists, he was willing to accept a very partial flood, and, of course, a very limited dispersion of mankind at the period of its occurrence. But nothing is gained by such admissions and concessions. In the speculations of geologists the deluge has no place, and is allowed no consideration. As far as we are aware, they admit no deluge, however partial. Hence the admission of a partial deluge will no more conciliate the exclusive geologists than will a general one. We therefore reject the admission, and leave the brief Scripture statement in all its own breadth and force of meaning. scenes of antediluvian dominion and violence were, it is obvious, much more extensive than Miller's theory

supposes. There were among these men before the flood, men of "might and renown," spreading their rule by unrighteous aggression, by violent assault upon neighbouring nations, by cruel oppression and wrong, and by every species of injustice.

It perhaps may be said that we have no traces of so wide a distribution of mankind before the flood. But is it not quite possible that we have been overlooking such traces, or, which amounts to the same thing, mistaking them, and assigning them to the operation of other causes? The evidence may be there, but blended, as it most probably is, with other evidence, our scientific men may have been misreading it.

SECTION VI.

CONSIDERATIONS RESPECTING THE PROBABLE EXTENT OF THE DELUGE.

The extent of the deluge.—As wide as the dispersion of mankind.—The Bible asserts that all men were destroyed by it.—Physical theories of difficulty and of solution discarded.—In the case of a miracle they are out of place.—We are not rash to multiply miracles.—Only those recorded in Scripture believed in and contended for .-- These received in their entireness .- A universal deluge not at present asserted .- Its moving cause, the wickedness of man .- If man covered the whole earth, the deluge did.—Not necessary that all the lower animals should be destroyed.—Aquatic ones not destroyed. -The earth not peopled with the same species of animals.-Peculiar fancies.—We need only consider what the Bible affirms of the total destruction of man.—The clear testimony of the Bible accepted -the primitive record cited, and considered .- The testimony of Scripture consistent.—The sacred writers not ignorant of the facts of the case.—No contrary facts have turned up.—Consideration of the instrumental causes of the deluge.—These causes distinctly stated in Scripture.-God infinitely able to drown the earth.-Natural causes wielded by His hand .- So long as scientific men shut out this miracle, they must mistake.-No right to ignore the deluge when speculating on the period in which it occurred .-Miracle does supply data, and must be accepted or denied.-We ask for no miracles but those recorded in Scripture.-The miraculous flood has occurred within the period during which man is said to have been on the earth.—The responsibility of those who deny it.—The probable effects of the deluge on all superficial deposits.-Denudation, its deposits, and changes.-The subsiding of its waters.—Its modifying influences.—Conclusion.

This is a question which we feel to be an unspeakably important one. And at the outset of the discussion we assume, and are prepared to maintain, the position, that however widely man was distributed at the period when the deluge occurred, the deluge itself was equally extensive. If, indeed, the language of the Bible means anything, and if its teaching on the subject is to be admitted, this is a conclusion that cannot be avoided. It absolutely asserts that, with the exception of the eight souls preserved in the ark, every man, every human being, perished by this terrible Divine judgment. Hence, wherever men existed at a period so far back as the deluge, there the deluge prevailed, and by that deluge such men were destroyed. And should it at length be proved that, at that period, the whole earth was inhabited by man, then the deluge prevailed over the whole earth, and will probably be found to furnish the best solution of its superficial phenomenon.

Thus, if such an event can be shown to be necessary to meet the case, our two preceding sections will have prepared our way to admit a pretty general, if not an universal, deluge. We do not at present see any need to extend the deluge far beyond the most distant habitation of man. Admitting that the waters of the deluge overflowed the whole earth, and under the whole heaven—or most distant horizon—of the last human spectator, then the demands of Scripture language on the subject would probably be fully met.

As to theories of physical impossibility, I do not

see that we have anything at all to do with them. the deluge be admitted at all, it must be admitted in its scriptural character,—as a direct interposition of the Almighty Creator to punish His sinful creature, man; and then its unquestionably miraculous origin takes it out of the category of mere physical investigations altogether. That the God who made the earth. who projected the mighty spheres of heaven on their courses, "and who holds the waters as in the hollow of His hand," was not able to find water to "drown the world of the ungodly," is the supposition of grovelling ignorance, and a supposition which denies "the power of God." Once admit, as every true believer of the Bible must, that the whole was miraculous, and then we consider that all physical speculations on the subject are utterly out of place; nor are they, moreover, of any real service when we are arguing with men who question the truth and correctness of the scriptural account on the ground of a supposed physical impossi-If, notwithstanding the manifold evidence which we have for the Divine authority and truth of the biblical account, the votaries of science deny it because impossible, these speculations, I fear, will do little toward convincing them of their error. We therefore discard all theories respecting the increase of temperature in the waters of the ocean, and respecting the probable conversion of all the vapours, and of the oxygen and hydrogen of the atmosphere, into water. Of course we believe that all this was possible to Omnipotence: and, from examples furnished in Scripture, we also admit and believe that, even in miraculous operations, Omnipotence sometimes avails itself of natural means and agents to accomplish its purposes. But in no case would we have recourse to such natural means and agents to account for miraculous operation; and we advisedly discard them from our discussions respecting the deluge. Whoever may object and cavil, we are content to leave the deluge enshrined in its own awful grandeur and magnificence,—as a direct interposition of man's offended Creator and Judge,—expressing, by this terrible supernatural judgment, His deep abhorrence of man's impiety and violence.

We are not rash to multiply miracles. We would not in any unauthorized case, fly to them as an escape from the pressure of difficulties. We would never presume to coin them for the Almighty. Where His own inspired word affirms His direct interposition, or tells us that a miracle was wrought, we devoutly and most thoroughly believe it, -believe it in its entireness, -or that the Omnipotent One fully achieved all that the central act made necessary, or which it involved for its completeness. But we go no farther than this. Where nothing appears, and where nothing is affirmed, but the operation of natural causes, then by such causes alone must any phenomenon in question be explained, or be left unexplained altogether. In such cases we are not, we earnestly contend, at liberty to have recourse to miracle. To do so is no less unscriptural than it is unphilosophical. But we are in no such difficulty with regard to the deluge. The Jehovah Himself claims the doing of it; no inferior agent appears upon the terribly magnificent scene. Each act, each operation, and each advancing step in the appalling catastrophe, is the work of His own hand. If miracle is asserted in the Bible, it is asserted in relation to the deluge: even the subsequent action of natural cause is made supernatural in its mode and degree.

And, believing these facts—and believe them we must, or deny the Divine record altogether—we feel that consistency requires us altogether to discard all physical theories of solution. To stoop to them is half to surrender the point in dispute to the adversary. We shall not, at any rate, number ourselves with them. If it can be shown that facts demand a universal or a very general deluge for their production, or that the Bible itself really teaches one, then no objections grounded on mere physical difficulty, would in the least degree deter us from firmly, and, we fearlessly add, intelligently believing in such a deluge. He who made this stupendous universe of orb and system, and who, according to His good pleasure, produced and marshalled all its elements, must be infinitely equal to cover even "the whole earth" with water to the depth asserted by the sacred writings.

We do not at present commit ourselves to a universal deluge. It may or it may not have been universal. We do not think that the Bible requires us to believe in its absolute universality. Its provoking and direct moving cause was a moral one. It was sent in consequence of the daring impiety and violence of man. Amongst the antediluvian race, wickedness in its most outrageous forms had become rampant and all but universal. What a frightful picture does the brief history give of their moral state! Human nature at once displayed all the youthful vigour and all the ripe maturity of full-grown and bloated wickedness. Everything had received its deadly taint. "The earth also was corrupt before God, and the earth was filled with violence. God looked upon the earth, and behold, it was corrupt; for all flesh had corrupted its way upon the earth." These are the reasons which the Divine judge assigns for the destruction of His creature man by the waters of the flood: reasons which are repeated again and again, and with the utmost distinctness. It is thus clear beyond dispute, that the cause which the Bible assigns for the flood was a moral one: and therefore, unless some other considerations should be found to demand it, we are not, by the Bible, necessitated to extend it beyond what was requisite for the full accomplishment of its moral purpose. If man, impious, guilty, and doomed man, had extended himself and his revolting corruptions over the whole earth, then unquestionably the Bible requires us to believe that the waters of the flood were of commensurate extent. If the one, then the other, too, covered the whole earth. The two, according to the clear teaching of Scripture, were coextensive.

It was not necessary that all the lower animals should be destroyed, nor were they. It is clearly implied in fact, that none were utterly destroyed, except such as could not exist in water. There is no hint given that aquatic animals, such as fish and the mollusca, were destroyed, or that it was the Divine design wholly to destroy them. We are thus warranted to conclude that animal destruction was rather an incident than any part of the primal design of the deluge. Land animals, and creeping things, and the fowls of the air would, as far as the deluge extended, perish as a matter of course. They could not, without a miracle, have been preserved, and, as we have already remarked, we are not at liberty to coin miracles for the Almighty. At least no miracle was wrought for their preservation, except for those in the ark, and therefore they necessarily perished; and for this there seemed a sufficient moral reason. The destruction of land animals, and especially so far as they in any way stood related to man, would tend more deeply to impress on mankind of all ages Jehovah's deep abhorrence of human wickedness.

We have already explicitly said, that where the Bible affirms a miracle to have been performed, we fully believe its statements. We believe in such miracle in its entireness, or that all was miraculously accomplished, which it required a miracle to accomplish, and the accomplishment of which was necessary to the completeness of the central act of such miracle. Thus, we are prepared to go so far as to admit, that if the deluge expectations are already to the central act of such miracle.

tended to the whole habitable globe, that the Almighty, as far as He saw fit, caused the animals of the globe to repair to the ark for their preservation during the prevalence of its desolating waters. We do not now affirm that the deluge was thus extended. All that we say is, that if the deluge did extend to the whole globe. then so did the miraculous agency that produced and The utmost that the language of the Bible ordered it. can be proved to assert is, that all the land animals known to man, and which were contemporary with him, were taken into and preserved in the ark. There is no proof, either direct or implied, that the animals living beyond the bounds of man's habitation were conducted into it. No moral purpose required their preservation, nor are we aware that any moral purpose can be assigned for their destruction; and we never find miracles wrought, and especially not such miracles, except to serve some great moral purpose, some purpose worthy of the direct interposition of the righteous and all-wise Governor of the world. But no moral purpose, that we can conceive of, could be answered by the miraculous transfer of all the creatures inhabiting countries not peopled by man, to the ark in Asia, before the flood, and, after it, a re-transfer of them back to their original habitats.

Were the same species and genera of animals universally distributed over the earth, the case would be widely altered. Then the animals now found in regions distant from the central part of Asia, might, in the course

of ages, have emigrated to those regions, spreading themselves over the face of the earth. But, as is well known to every naturalist, the contrary is the fact of the case. Each country has, on the whole, its own peculiar fauna as well as flora. The great and beneficent Creator has adapted creature existence to the different conditions of climate and temperature which obtain in the earth. Thus the animals, as well as the plants, of Australia and South America, are peculiar to those regions of the globe. As far as we are aware, no trace of them has been found in that part of the world supposed to have been the cradle of the human race, and the central point of the deluge. If therefore the animals of these regions were preserved in the ark at the period of the flood, we must suppose a twofold miracle, viz. the miraculous transfer of them from the countries to the ark before the flood, and a miraculous transfer of them back again after the flood.

But in the absence of any direct biblical testimony to that effect, and of any great moral purpose to be answered, who will dare to assert that such miracles were wrought. We shall not take the responsibility of doing so. The position which we assume in the case is altogether a hypothetical one. All we assert is, that if it can be proved that if the Bible really teaches an absolutely universal deluge, then we are prepared to believe in such a deluge; and that if geologists can demonstrate the presence of man upon the earth in all these distant regions at a period so far back as the deluge, then we

are prepared to affirm that the deluge embraced all these regions.

With regard to the possibility of any one being able to prove the former point, we have the gravest doubts. At any rate, until it is proved, we may safely take the contrary for granted. Thus the ground of debate is greatly narrowed. We need only take into consideration what the Bible affirms respecting the universal destruction of man, and the localities of the globe where the fossil remains of man are said to have been discovered. If these remains are from six to nine thousand years old; then, wherever they are found, there the deluge must have prevailed. We thus, in fact, suspend our decisions on those of our geologists. The Bible tells us that every human being existing at the time of the flood, except those in the ark, were destroyed by that deluge; and, therefore, if men then peopled these localities, the deluge must have extended to and embraced them.

We accept the clear testimony of the Bible. And that Bible most distinctly teaches, and everywhere supposes, and takes for granted, that, with the exception of the eight persons in the ark, the flood absolutely destroyed every human creature. If clear and multiplied testimony—testimony repeated age after age, and by different sacred writers; if such testimony can prove the truth of any fact, then we have in the Bible such testimony to the truth of the fact now in question. Hence there is really no alternative between believing

this fact, and the direct denial of the truth of the Scriptures in toto. Even could the objector to this fact disprove, as some unfaithful sons of the Church have endeavoured to do, the inspiration and truth of the five books of Moses, it would avail him but little. must also disprove the truth of the gospel history, contradict the assertions of the Divine Teacher himself, and overthrow the writings of His apostles. But we concede none of this ground. If the New Testament Scriptures are true, then so are the Old. Both Christ and His apostles assert, as well as confidently assume the Divine authority of "Moses and the prophets," and therefore the perfect authenticity of the records which they have left us. Hence both portions of Scripture must be denied or admitted together. To marshal the evidences for their truth is not our present business. It has been repeatedly done by others. therefore assert, not from fancy or fanaticism, but on the ground of the most cogent and decisive evidence, that these scriptural statements are infallibly true.

What then does the Bible teach concerning the point now under consideration? "And the flood was forty days upon the earth; and the waters increased, and bare up the ark, and it was lift up above the earth. And the waters prevailed, and were increased greatly upon the earth; and the ark went upon the face of the waters. And the waters prevailed exceedingly upon the earth; and all the high hills, that were under the whole heaven, were covered. Fifteen cubits upward

did the waters prevail, and the mountains were covered. And all flesh died that moved upon the earth, both of fowl and of cattle and of beast, and of every creeping thing that creepeth upon the earth, and every man." And these facts are again elaborately repeated in the twenty-third verse of the same chapter. "And every living substance was destroyed which was upon the face of the ground, both man, and cattle, and the creeping things, and the fowl of the heaven; and Noah only remained alive, and they that were with him in the ark. And the flood was upon the earth one hundred and fifty days."

Such is the primitive record on the subject; and all subsequent ones are in perfect agreement with it. refers to it, and several of its circumstances are implied in his remarks. "Hast thou marked the old way which the wicked have trod? Which were cut down out of time, whose foundation, or abode, was overflowed with a flood?" Such allusions can only be founded on fact. Then in reference to the antediluvians, Christ affirms, that "the flood came and took them all away." "And the flood came, and destroyed them all." The same terrible judgment and utter destruction are referred to, and are confidently assumed by the apostle Peter, in the second of his epistles: "And spared not the first world, but preserved Noah, a preacher of righteousness, with seven others, and brought a deluge on the world of the ungodly."

Thus the testimony of Scripture on the point is

throughout harmonious and consistent, affirming, with the exception of the eight persons in the ark, the utter destruction of the whole human race. In many biblical statements on the subject, this is asserted, and implied, and taken for granted. The very exception, always so carefully named and inserted, most clearly proves the utter destruction of all others. If other persons were excepted, why are Noah and his family alone named? Had no exception been mentioned at all, the proof that all others were destroyed would not have been so conclusive. Then, perhaps, exceptions might have been supposed; very general language often clearly admitting of such exceptions. But as the exceptions are named, and named in this exclusive form, all ground for supposing any other exception is entirely taken away.

And let us not be told that the assertion was made in ignorance of the facts of the case. Moses was an inspired historian, and his statements are those of the unerring Spirit. But losing sight of this, for a moment, as a mere historian, his advantages were of the highest order. His intimate connection with Asia and Africa, and most probably with Europe, and the fact that he was skilled in all the learning of the Egyptians, the most learned of the ancient nations, and the cradle of science and art, all this would enable him to speak with authority on the subject. In all his researches he had found, and he had heard of, no exceptions. All the learning of Egypt had supplied him with none; and all the traditions of the nations then known, had supplied, had hinted none.

Then at the time when its writers penned the New Testament, national and geographical knowledge was greatly extended. With the exception, perhaps, of America, of few countries would the writers be entirely ignorant. And vet the testimony is still the same. Assyrian, Babylonian, Persian, Macedonian, and Roman conquest have brought to light no nation, no tribe, however distant, that did not belong to the same human race, or that asserted its descent from some more ancient stock. During all the ages over which these conquests spread, no evidence had turned up to induce the subsequent writers of Scripture to modify the original statement. By the teaching of the gospel, and by the ministry of the apostles, the statement is repeated again and again, in north and south, and in east and in west Asia, in different parts of Africa, and in Europe, and the isles of the sea; and yet it meets with no counter statement, and is met with no counter assertion. So far as the nations of antiquity are concerned, and they were the most competent judges in the case, the statement is left unchallenged. Could the evidence for any fact be more abundant, accumulative, continuous, and satisfactory? What could convince the person who rejects such evidence? Let the objector point out its flaw; let him discover its element of weakness, or show us its broken link. Until this is done, we shall feel that the most cautious candour demands that we believe it.

But ere dismissing this branch of the inquiry, it will

be necessary to consider the assigned instrumental causes of the deluge, and the effects, as far as they are suggested by the biblical narrative, which such causes would produce. Such causes are very distinctly stated. "In the six-hundredth year of Noah's life, in the second month, in the seventeenth day of the month, the same day were all the fountains of the great deep broken up, and the windows of heaven were open." Here are two distinct instrumental causes specified, the breaking up of all the fountains of the great deep, and the opening of the windows of heaven. In both cases the language supposes supernatural action; and action of a very powerful, extensive, and tremendous character. Whatever may be meant by the fountains of the great deep-whether immense collections of water, kept, as in reservoirs, beneath the crust of the earth, or all the seas and oceans of the ancient world-sudden and powerful convulsion, and convulsion of an extended character, is evidently declared. Then, the action was simultaneous,-"in the same day;" it was wide-spread, -" all the fountains;" and it dealt with all the large collections of water within, or on the globe,—"all the fountains of the great deep;" and the action was of immense force,-" were broken up." Then these terrestrial convulsions were connected with equally terrible atmospheric action. The expression, "the windows of heaven were open," indicates rain of a torrential character; and this torrential rain continued for forty days and forty nights to pour down its waters upon the

earth. Whether this water was obtained from the oceans of the ancient globe by evaporation, or by the conversion of all the vapours and gases of the atmosphere into water, by electric action, we stay not to inquire. The deluge was a miraculous event, and can never be accounted for by the operation of natural principles; and should its solution be sought on such principles, mistake and failure must be the result.

Natural instruments might be employed by the Jehovah; but if so, they were directly wielded by His Almighty hand, and were made supernatural, both with regard to the suddenness, extent, and energy of their action. But we speculate not. We are satisfied with the simple but sublime fact, that the Almighty Creator of the universe, of whose boundless resources astronomy has accumulated a thousand conclusive proofs, could be at no loss for means to accomplish His judicial purpose on His guilty creature, man. He was infinitely equal to perform whatever was necessary to execute His threatened judgment on mankind, and to drown the old world with a flood of waters. Enough for us that He, who is absolute Being, who is "God over all," was able, with or without any instrumental means, to discharge the water from "all the fountains of the great deep," and all the aquæous vapours, and all the oxygen and hydrogen—the elements of which water is composed—of the whole atmosphere, upon the dry land or earth, and thus to destroy all its terrestrial inhabitants. All farther inquiry in this direction we believe to be useless, and will, if attempted, find itself utterly baffled. In human theories on the subject, we have no faith, and therefore discard them from our pages.

And here we may be permitted to say, that so long as scientific men are resolved to shut out all miraculous action from their inquiries, that is, all action which, either in its cause or in degree, is supernatural, so long must they necessarily misinterpret some facts, and arrive, not only at false, but all sorts of contrary and opposing conclusions. It cannot but be so, if there never has been any miraculous action at all; and bold indeed must be the man who would affirm that there has not. But if there ever has been any miraculous action, then mere natural causes can never account for all the phenomena which the physical world presents to our observation. Mere natural cause, however minutely searched and carefully analysed, can never account for supernatural At any rate, to make them at all approach to an adequate solution of such effect, the natural causes must be multiplied, and their operation must be indefinitely prolonged. Thus, to apply this important principle to the "breaking up of all the fountains of the great deep "-whatever convulsions and changes this graphic and expressive language may denote—it is certain that they were of so extensive and stupendous a character, that it would take thousands, and perhaps hundreds of thousands of years, to effect them by the gradual operation of natural causes. And who, therefore, does not see, that a person speculating on the effects in question,

if resolved to shut out all miracle in the case, must necessarily arrive at a false conclusion, and at a conclusion utterly contrary to the real facts involved. He must of course conclude, that what was in reality effected in a short space of time, required the lapse of many thousand years.

Should the philosopher reply, But as mere natural inquirers we have nothing to do with miracle; and when investigating mere natural phenomena, we are bound to exclude all considerations of the kind,—we answer, Very well; then speculate on to your utmost content; but in this case do not complain nor be surprised if those who still humbly believe in the truth of the testimony of the venerable oracle of heaven, demur to your conclusions, and that, when thus conducted on false and partial data, they should regard as utterly unworthy of credit the speculations which lead you to affirm decisions at variance with its inspired statements.

We say to geologists, some time during the period over which your speculations extend, the Bible says that a deluge of waters was brought upon the world by the miraculous agency of God, for the sin of man, and to destroy man from the face of the earth; and it further states that that deluge was accompanied by tremendous convulsions of the earth, and by a torrential rain of forty days and forty nights' duration, which rains and convulsions must have produced, and have produced in a short space of time, effects which could only be produced by the operation of natural causes

during the lapse of many thousand years; and, therefore, if you are resolved to shut out from your speculations respecting these periods all consideration of these miraculous interpositions, you must necessarily and unavoidably come to false conclusions, and take for granted what never really existed. It cannot be otherwise. Can a correct and just conclusion be reached in any subject of inquiry, when a very considerable part of the data belonging to that inquiry is purposely left out?

To say that a miracle cannot be regarded as data in any subject of natural inquiry, is either to say that miraculous action produces and leaves no effects, or else it is to deny such miraculous action altogether. To assert the first alternative is in the highest degree absurd. Did not the miracles performed by the Divine Redeemer leave effects,—tangible and permanent effects? -and effects, too, which philosophy, had she attempted to investigate them, would doubtless have sought to trace up to the operation of natural causes? Probably those effects, so far at least as they could be brought under the observation of man, did not much differ from effects which the operation of natural causes would produce. Hence, in speculating upon them, the natural philosopher might have concluded that they were thus Had such a natural philosopher examined some of the miraculous cures wrought by Christ, and had he done so resolved to ignore and shut out all miraculous agency, he must, of course, have asserted that the sick whom by His sacred word or touch, or simple fiat of His omnific will, Christ at once restored to perfect health, were in the course of days and weeks, gradually restored, by nature's self-restoring power, or through the application of medical skill and appliance. Now the two cases are not only parallel, but in regard to the effects which must have been produced by the deluge, the reasoning is all in our favour. Miracle, and especially such miracle, must leave data; and data which, although it may closely resemble that produced by the operation of natural causes, yet, in cases where the Bible affirms that a miracle was wrought, ought to be separated from it; and if neither separated nor allowed for, then our speculations must inevitably land us in false conclusions.

Hence, the only alternative left to the objector is, to deny miracle altogether. But then we should very earnestly remind him, that his bold denial is not disproof. The Bible most clearly and emphatically asserts, that at the period in question a great miracle was wrought, and a miracle which must have left extensive and stupendous effects, and have yielded a large and complicated phenomenon; and until the Bible is disproved, and its clear statements on the matter are shown to be false, we shall still believe, and advisedly assert, that some time during the period which the speculations which we are reviewing embrace, a miraculous deluge occurred; and on these tangible grounds we are prepared further to assert, that any conclusion

come to on the consideration of mere natural phenomena only, to the exclusion of all miraculous effect, is, and must be, utterly uncertain, and therefore entirely unworthy of credit.

We may be deemed weak for our belief, and may be pitied for our ignorant prejudices, but until the above arguments are disproved, or are shown to be inappropriate to the case, we shall still feel assured that our belief is rational, and that we have on our side, not only unspeakably the strongest probabilities, but also hundreds of philosophers and men of science, both of the past and of the present, as large in their grasp of thought, as lofty in their intelligence, and as cautious in their investigations, as are any of the proudest devotees of mere secular science found arrayed against the truth of Divine revelation.

Perhaps we may be scornfully asked, Would you then press miraculous agency into every inquiry that may be instituted respecting the antiquity and past history of man? We calmly reply, By no means; we do not ask for the admission of a single miracle beyond those which the Bible itself has put on record. With miraclemongers we have no sympathy, and all forgers of miracles we would unsparingly denounce. With those who, when pressed with geological fact and evidence, take refuge in the power of God, we deliberately disown all fellowship. Such utterly illogical modes of meeting scientific difficulties, we would join the most zealous advocates of science in contemning. They are as childish

as they are injurious, and not only do dis-service to the cause of truth, but inflict a positive injustice upon it; making it, in a great measure, responsible for the weak assertions and often foolish vagaries of its so-called advocates. We would remind such, that we have no right either to *make* or to suppose a miracle, to meet our difficulties; and if we cannot solve them without bringing in the operation of miracle, then we must leave them unsolved, or devoutly wait until the requisite data can be obtained to solve them.

But the case is altogether different when the Bible distinctly asserts that a miracle was wrought. We have then no alternative, but either to disprove the truth of the Bible, or to admit the truth of the miracle. This is a point which we would most respectfully, but most earnestly, press upon the attention of our scien-Few of them, we trust, are prepared to distific men. card their Bible, or to deny the truth of its statements; and if not, then they must admit the truth of its miracles, and, as one of the most stupendous of those miracles, that of the deluge; and therefore, when considering the age of the deposits containing the remains of man, they cannot consistently ignore the effects of that deluge, nor attribute all the phenomena of such deposits to the operation of natural causes. Let such causes have their due weight in the investigation. means ignore them; but let the biblical deluge have its due weight also. Both have contributed to supply the data, and no conclusion can be just that excludes

either one or the other. This is a position that is in the highest degree fair and reasonable, and is, we believe, incapable of real disproof. If conclusion can be logical, then the above conclusion is logical; and if deduction can be just, then the above deduction is just.

The position we take is this: The writers on man's antiquity assert that he existed on the earth more than eight thousand years ago; but, within that period, the Bible and national tradition distinctly teach that a stupendous and miraculous deluge has occurred, and therefore, in speculating on the deposits containing the remains of man and his cotemporary animals, the probable effects of that deluge must be allowed for. If they are not allowed for, then, of course, we must make the slow operation of natural causes our only rule of judgment in the case, and shall thus necessarily be led to assign thousands of years for the production of effects which in all probability were produced in one. we feel that we have real cause for complaint, and ground for grave and thoughtful demur, when on apparent evidence alone, to the exclusion of supernatural cause, when the Bible asserts that a miracle was wrought, we are pressed with conclusions seemingly hostile to the truth of that Bible. On grounds which we need not again repeat, we assert that a miracle was wrought, and that that miracle produced stupendous effects; and therefore, from every conclusion said to be arrived at in utter disregard of such miraculous effects,

we shall always feel ourselves at full, rational, and philosophical liberty to dissent. They are arrived at by incomplete and utterly defective modes of investigation. In coming to such conclusions, important and essential data has been excluded, and thus they are altogether vitiated

And we respectfully, but firmly, demand, Ought candid men, on such grounds, to embrace positions hostile to the authenticity and truth of the Bible? Do they not involve themselves in the gravest responsibility, when, on such partial considerations, they risk assertions respecting the antiquity of man that bring them into direct collision with express Scripture statement? As thoughtful and responsible men, ought they not to pause before they, on the partial grounds in question, commit themselves to theories which directly lead to scepticism, and which have a fearful tendency to plunge the tens of thousands of our reading young men into its dreary gulphs and demoralizing influences?

We do not fear for the truth itself; but we do most seriously fear for the crowds of young men, and for statesmen, and for men of business, who have not the time, and many of them not the ability, to work out these momentous questions for themselves, and who, therefore, for their views and opinions respecting them must, more or less, depend on the leading minds of the day. The truth itself is perfectly safe within the citadel of its own Divine and luminous evidence; but although the floods of sceptical sentiment directed against that truth

leave it untouched, unweakened, and towering in its own majestic defiance, yet it is to be feared they will sweep away myriads of precious youth and of the readers of mere secular literature, into the whirlpools of unbelief and into the gulfs of death.

Our way is now prepared to consider the probable effects which the physical causes employed in the deluge would produce. We have already said that those effects must have been on an extensive and stupendous scale. "All the fountains of the great deep" could not be broken up, discharging their hitherto imprisoned waters upon the dry land of the earth, nor a general torrential rain be poured upon it for forty days and forty nights in succession, without producing great and extensive changes, and especially on the surface of the earth and in the superficial deposits covering it. If "the fountains of the great deep" were internal reservoirs, or large collections of water beneath the surface of the globe, when these were "broken up," the superincumbent strata must have been rent and fissured, and the immense caverns left by such reservoirs must subsequently either have become seas, or large depressed areas, and perhaps plains and valleys, by the falling in or sinking down of the superincumbent mass of rock once stretching over them. Hence, in the new world, after the flood, we may expect lakes and seas and extensive depressions, and examples of apparent denudation, and other kindred phenomena, which did not exist in the old world before the flood.

Then the language employed in the sacred narrative supposes that the number of these bodies of water was considerable. "All the fountains of the great deep were broken up." Thus the effects produced would be as wide-spread as they were stupendous. The language itself indicates anything rather than limited phenomena. Rents in the earth's crust, fissures in the rocks, partial upheavals, and a considerable number of depressions must have followed wherever this "breaking up" occurred. Then all the pre-existing superficial deposits and materials would be greatly affected. The rushing waters, poured forth from such internal reservoirs, and impelled to tenfold energy by the hand of Almighty vengeance, would, in many cases, entirely sweep such superficial deposits away, would greatly modify and re-arrange them in others, and would, at length, leave deposits of their own, composed of sand, clay, and gravel, in which all previous remains would be re-embeded, along with the debris of the flood itself. waters would also tend to cut and to deepen pre-existing gorges, to form or deepen transverse valleys, to accumulate singular deposits, to transfer older ones to new localities, and to re-mix and to blend with them the remains of the animals, as well as of man, which were destroyed by the deluge.

Then all this latter class of effects would be produced if we regard "the fountains of the great deep" as meaning the seas and oceans of the ancient world. Such seas and oceans could not be made to pour their waters upon the then dry land, in the brief space indicated in the sacred narrative, without producing immense results. In whatever mode this was done-and on this we shall not speculate—it must be admitted that such large bodies of water could not be made to move over the earth, and to assist in covering all the high hills under the whole heaven, without greatly disturbing all loose superficial materials, such as sands and gravels, nor without further scooping out valleys, and widening river courses, and, in many instances, driving up such materials as were in their way, from lower to higher positions on the sides of valleys, and even on to the tops of hills themselves. "All the fountains of the great deep," simultaneously rushing from many and opposite points, would occasion eddies, foaming whirlpools, caused by the meeting of great bodies of water flowing in contrary directions, and all resulting in the formation of deposits and other phenomena, singular in their kind, and most difficult to account for, and which, if the deluge be denied, can only be accounted for by supposing the operation of unlikely causes, of great force and of lengthened duration. At present we do but indicate the effects which the biblical language suggests. The principles which we thus obtain will be applied afterwards, when we come to consider the geological phenomena of the deposits containing the remains of man.

But to the above probable effects we must add all those which would necessarily be produced by forty days and forty nights of torrential rain. On all soft and loose superficial deposits, the effects of such rain would be immense, and the denudation of all such deposits would be on a vast and extended scale. waters of the flood had risen sufficiently to protect them from the action, such incessant and prolonged torrents of rain would sweep away from hill-sides, and from all exposed and shelving situations, an inconceivable amount of material. At the same time, all the sands and gravels lying in lower situations would be softened, and a large portion of their materials be held in loose and partial suspension, and would thus allow heavy bodies, such as bones of animals, and the flint implements of man, to sink to considerable depths in such deposits, without greatly disturbing their original arrangement; or a re-arrangement of the materials might be affected, greatly resembling the original one, and difficult to distinguish from it, and yet containing many additional fossil remains.

Then, by whatever means the waters of the deluge subsided, whether by the upheaval of the land, or, as seems to be clearly indicated by the language of the sacred narrative, by the gradual retiring of the waters into their ancient or new beds, and by evaporation, the effects produced must have been of a very extended and considerable character. They would still further denude the sides of hills, more extensively modify the surface of the earth; would sweep away much of the gravel and mud which the flood had deposited; would

deepen and widen valleys and river channels; the waters, delivered up again to the force of the law of gravitation, would rush through them to the ocean, scooping them out, and leaving on their sides, in sheltered situations, deep sections of the gravel and mud which had previously been deposited by their own action. In other cases, valleys and river-channels might be partly or wholly filled up, making the streams which should drain the new world, find for themselves new, or greatly modified, channels.

Admitting that the deluge occurred—and we shall take this for granted until it is disproved—then it must be admitted that all this, and much more similar phenomena, must have resulted from it. Who that has attentively watched our puny yet destructive floods, and especially such as have occurred in France and other countries of Europe in recent times; or that has observed the effects produced by the sudden escape of large bodies of water, such as the late Sheffield flood,—can object to the above sober description of the effects which must have been produced by the breaking up of "all the fountains of the great deep," and by the lengthened torrential rain employed in the Noaic deluge! How arbitrary and apparently inexplicable are some of the changes which such floods produce; and how strangely placed and strangely mixed are some of the deposits which such floods throw down and leave!

But what are such puny and limited floods when com-

pared with the biblical deluge, the suggested and probable effects of which we have endeavoured briefly to sketch! The effects must have been proportionate to the unspeakably more extensive and stupendous cause in such prolonged operation, - much greater, probably, than we are able to conceive. But be this as it may, the above considerations warrant us to conclude that, during its prevalence on the earth, the deluge was capable of producing results, both in the shape of change and of denudation, which the slow operation of natural causes could only produce in the lapse of many thousand years. In the form of denudation alone, the effects must have been on a truly stupendous scale. a brief heavy thunder-storm crowds our hill and mountain sides with rushing pigmy torrents, and fills our streams and rivers with a mud-charged flood, furiously hurrying along gravel and large blocks of stone, to be perched on some elevation, or left in some sheltered spot, or to be swept along, on to the ocean bed,—then what, in this way, would be effected by the rushing of all the waters of the great deep, and by forty days and forty nights of torrential, and most probably of thunder rain? With only our present experience of such terrible phenomena, conception is utterly baffled when it attempts to calculate the results. All superficial deposits must have very greatly suffered. On the sides of hills especially, whole formations would, for the most part, be swept away, leaving on and near the tops of such hills, and in depressions and "pipes" of the older strata, and in more sheltered positions, patches of such formations, often most difficult to account for except on the hypothesis of the biblical deluge, and on any other hypothesis demanding for their production a most varied and prolonged agency.

Again, until prevented by the general rising of the diluvial waters, the swelling and rolling floods would rush through new as well as through old rents and fissures, which might, for considerable distances, exist in the solid strata, tending to wear and scoop out such rents and fissures, or to widen them, leaving them as dry gullies, or preparing them to form the beds of the rivers which should water and drain the countries of the new world. Into other and more limited rents and fissures, as well as into caves and other lateral and surface-openings in rocks, materials of sand and gravel, and the whole debris of the deluge would flow and be deposited, and in many cases, would be partially or wholly mixed with the materials which such caves and openings had previously contained. It is also reasonable to suppose, that, where it was possible, animals as well as man would fly to such caves for shelter from the torrential rains and the deluge, and would there be overtaken and destroyed by its prevailing waters; and that their remains, together with other remains carried in by the flood, would, with the previous deposits, be all found mingled in one mass, covered up with sand or mud, and buried beneath a floor of stalagmite, or with red earth or clay, mostly formed from the decomposition of the rock by atmospheric and chemical agency.

Such, it must be admitted, are the necessary results, and such the sober and legitimate inferences, from the deluge, briefly but graphically described by the sacred historian.

We shall not, at present, push our remarks on the subject any farther. The application of such remarks to much geological phenomena must be obvious to all who have paid any attention to the subject, as well as to the more recent speculations of geologists; but that application we shall defer to its own proper place in the discussion. We now content ourselves with thus briefly pointing out the phenomena, which all must allow are fairly suggested by the deluge, and which, more or less, must have resulted from the action of that deluge, wherever its causes prevailed. We have not in the least degree attempted to strain or to exaggerate the biblical account. We have not endeavoured to foist anything into that account. In this investigation our object is the triumph and establishment of truth, to satisfy our own minds on this momentous subject, and to assist other candid inquirers to arrive at safe and legitimate conclusions respecting it.

To add anything to the simple testimony of the Bible, or to attempt to deduce from it more than its language really and legitimately teaches and implies, are courses from which we utterly and deliberately shrink. Divine truth needs from us no such doubtful service,

and asks from us no such questionable modes of defence. We only covet to assist in placing truth in her own light, and in chasing away the one-sided and doubtful speculations, which, to the eye of man, have dimmed her lustre and obscured her brightness.

We would, therefore, much rather keep within the meaning of Scripture language, than attempt to force from it inferences which it does not fully warrant. To attempt to make out a case by any other than by the most legitimate means and inferences, is what we utterly spurn. We only wish to be the humble interpreters of the most ancient and venerable oracle of heaven which mankind possess, and to ascertain and describe what it says respecting the events which it declares have occurred in connection with the past history of man upon the earth. Mere speculation and crude theory we leave to those who love them, or who have need of them, or who can find no better employment than such speculations afford them. We would rather utterly fail in our attempt to solve the questions respecting the origin and antiquity of man now so earnestly agitated, than use any doubtful weapon in the case, or than seek to pervert the most rigid truth. Our consolation is in the assurance, that, whether our attempt to defend and elucidate it succeeds or not, the truth itself cannot fail. It does not await our decision respecting It stands not like some supposed culprit, awaiting the disposal of the charge on which it is arraigned. Our theories may change, and our speculations veer round

the whole compass of thought, and a long succession of hypotheses may rise and fall with their advocates, "but the word of the Lord," incapable of any change, and subject to no decay, "endureth for ever." "The word of the Lord, that shall stand."

SECTION VII.

CONSIDERATIONS RESPECTING THE REPEOPLING OF THE EARTH AFTER THE DELUGE BY THE FAMILIES AND TRIBES DESCENDED FROM THE THREE SONS OF NOAH.

The original command to people the earth repeated to Noah and his sons.—This command excludes the idea that some parts of the earth were already peopled.—Such theories have no countenance in Scripture.—The lands peopled by the different nations descended from the three sons of Noah.—Their wide dispersion more easily accounted for by the inferences respecting the time that elapsed between the flood and the birth of Abraham.—The divisions of the earth in the days of Peleg, some five hundred years after the flood.—The grounds on which this is inferred.—The dispersion more rapid after the confusion of tongues.—Dr. Robertson's view not correct.—The dispersion began in the second generation from Noah .- That dispersion early and extensive.—Still it would be long before the more distant parts of the world were reached.—The knowledge of events more and more lost as the dispersion widened.—The present inhabitants of distant countries could have no knowledge or tradition of antediluvian remains.—All the varieties of men to be accounted for without a distinct origin. - Influence of climate, etc., etc. - Close of the biblical history of man.—The points proved in the discussion.

AFTER the deluge has passed away, and Noah and those who were with him have gone forth from the ark, we find the original command given to mankind, respecting the peopling of the earth, repeated to the persons of Noah and his three sons: "And God blessed Noah and his sons, and said unto them, Be fruitful, and replenish the earth." "And you, be ye fruitful, and multiply; and bring forth abundantly in the earth, and multiply." From these commands, which may also be regarded in the light of promises and declarations that it shall be so, it is quite clear that the posterity of the persons thus addressed were designed to repeople the whole earth. The terms employed on the occasion are general and absolute; and as there is nothing, either in the context or the circumstances of the case, to show that these universal terms are to be understood in a limited sense, we are bound, so far as the Scriptures themselves are concerned, to take them in their fullest extent of meaning, and to believe that the whole habitable globe is intended. There is no hint of there being any exception to this. There is nothing in the language employed that could possibly lead us to suspect that some parts of the earth were already peopled and replenished with other and earlier races of men. command and declaration could be constructed to embrace the whole earth, then the command which we have quoted above must embrace the whole of it.

Thus the theories which suppose the existence of men belonging to other original races, have no countenance in the sacred Scriptures. Among the various families and nations descended from the sons of Noah "was the earth divided," after the flood. The descendants of Ham, we learn, peopled the hotter parts of Asia, together with Egypt, Nubia, Ethiopia, and other parts of Africa. The Cushites, descendants of his eldest son Cush, settled along the Persian Gulf and in Arabia. The Mizraim, descendants of another son, settled in Lower Egypt; and branches and sub-branches of the same family took possession of the countries afterwards inhabited by the Edomites, Moabites, Ammonites, and the children of Israel. (See the synoptical account of these nations left us by Moses, in the second chapter of Deuteronomy.)

The descendants of Shem peopled Central and Upper Asia, including Armenia, Mesopotamia, Assyria, Media, Persia, and other countries to the Indus and Ganges, and probably as far eastward as China itself, and probably America, if it be true, as seems likely, that its scattered tribes are of Mongul origin. The posterity of Japheth inhabited "the isles of the sea," including Europe and its many islands; and seems destined, according to Scripture prophecy and actual fact, to dwell most largely in the tents of Shem, both in the east and west.

Then, if our inferences respecting the length of time that elapsed between the flood and the birth of Abraham be correct, such a wide dispersion of mankind at this supposed early period is much more easily accounted for. And, looking at all the circumstances of the case, we do not see how these inferences are to be disposed of. And if not, then these two events, the flood and the birth of Abraham, must in reality have

been separated from each other by much longer periods of time than those which are allowed by our received chronological systems.

To the division of the earth, which the Scriptures assert occurred in the days of Peleg, we have already referred. The opinion that a physical division is intended by the expression, is, we think, the more probable of the two opinions held respecting it. It refers to the dividing of continents and larger portions of dry land, and the breaking them up into islands and smaller continents, and the separation of these from each other by channels, and perhaps by seas and oceans.

But the question is, When did this take place? The Scriptures say in the days of Peleg. But what amount of time elapsed between "those days" and the date of the flood? Dr. A. Clarke says, that it is supposed to have been about one hundred years. But upon what is this supposition based? Our previous remarks would lead us to infer a much longer period of time. Allowing even that Arphaxad was directly the son of Shem, and that Salah was directly the son of Arphaxad, and that Eber was directly the son of Salah, and that Peleg was directly the son of Eber,-we have at least four generations of persons. But this supposition is not certain; for, after Salah, the Septuagint brings in another Cainan, and an additional one hundred and twenty years; and although most chronologists reject this as a spurious addition, it at least shows that there is considerable uncertainty in the matter. Then this uncertainty becomes greatly increased by the fact, that Josephus adds one hundred years to the age of each of these patriarchs. He tells us that Arphaxad was born twelve years after the flood, and Salah one hundred and thirty-five years after, and so of the other two, making some four hundred and eleven years from the flood to the days of Peleg. Now, to say the least in favour of this longer period, it harmonises remarkably well with the conclusion to which other considerations have led us.

We have already seen that the authorities on the subject are at variance with regard to the length of time that elapsed between the flood and the seventieth year of Terah, the father of Abraham. According to the longest account, viz., that given in the Vatican copy of the Septuagint, the time was 1172 years. Peleg was the fifth from Noah, and, according to the biblical narrative, Terah was the fifth from Peleg. Upon an equal division of the period covered by the two series. we should obtain, as the result, from five to six hundred years as the probable date of the days of Peleg. Then the biblical narrative does not say that the division of the earth occurred at the time of the birth of Peleg. might be toward the end of his days; and, as he, according to the Hebrew chronology, lived two hundred and thirty-nine years, and according to Josephus, three hundred and thirty-nine years, we should, on the lowest calculation, get some three hundred and fifty

years as the date of the division of the earth. Probably five hundred years would not be too much. these points we do not take any positive ground. Enough for our purpose that all this is probable, and that it contradicts no statement of Sacred Scripture. Considering the uncertainty which there is in the case. the latitude we claim is not in any degree unreasonable, and especially when it is supported by so many other and independent considerations. The data in the case may not be perfectly conclusive, but it is surely sufficient to deter any person from a dogmatic denial on the subject. Allowing our deductions on the point to be only probable, some five hundred years, at the least, must have elapsed between the flood and the division of the earth in the days of Peleg. And, if this be granted, then the difficulty so often started respecting the wide dispersion of the tribes and families descended from the three sons of Noah, is in a great measure In the space of five hundred years the human race might easily have become so multiplied and spread over the face of the earth, that, at the period when the earth was physically divided, they might have gained a footing in all the countries, which, after the division, formed the principal parts of the dry land.

Nor is this all. The biblical narrative also forcibly suggests another thought that greatly favours the longer chronology which we assume for these events. We cannot conceive it to be possible that the descendants

of the three sons of Noah could have so multiplied and spread themselves, and that they could have become so debased in knowledge, and so utterly wicked in practice, as is clearly supposed was the case in the account that is given of the building of the tower of Babel, in the short space of some one hundred and thirty years. and while all the patriarchs who had seen the terrible judgment of God in the destruction of the old world were still living. At any rate, all this is very unlikely. It is much more reasonable to suppose that the various families had greatly increased, and had considerably spread themselves from the central point where the ark first rested, leaving the patriarchs in question behind. But all this was the work of time, and cannot reasonably be supposed to have occurred in a little more than one hundred years after the flood; hence, apart from any geological data for the above and other considerations all pointing to the same conclusion, we much prefer the longest date that can be legitimately assigned for the physical division of the earth.

Then, after the miracle of the confusion of tongues, the dispersion of mankind would doubtless be both more rapid and systematic. The brief language of Scripture is very emphatic and expressive on this point. "So the Lord scattered them abroad from thence upon the face of all the earth." Families and tribes speaking the same language would naturally separate themselves from those speaking other languages, and, in the form

of clans and wandering hordes, would spread themselves over the face of the earth.

True. Dr. Robertson and others (see his "History of America") have supposed, "that mankind were slow to move from the mild and fertile regions in which they were originally placed by their Creator." But sacred Scripture supplies no proof of this supposed fact. On the contrary, from its brief and sketch-like account of the dispersion of men after the flood, we should conclude that it began as early as the days of Noah's grandsons. Had they remained long together in the regions where they were originally placed, what was to hinder the mixing of the different families by intermarriages, and the consequent loss of family distinctions? An early and a very general dispersion seems necessary to keep the families of the sons and grandsons of Noah separate and distinct. The Bible itself evidently supposes that, on the whole, such a separation of them was maintained by the various families descended from the thee sons of Noah. Each of the several sons of Shem, Ham, and Japheth, and their grandsons, and most of their great-grandsons, became the founders of colonies, and the fathers of nations and kingdoms. Thus we have Nimrod, the son of Cush, and grandson of Ham, generally supposed to have been a cruel and ambitious conqueror, "a mighty hunter before the Lord; the beginning of whose kingdom was Babel, and Erech, and Accad, and Calneh, in the land of Shinar." "Out of that land went forth Asshur," the second son

of Shem, "and builded Nineveh, and the city of Rehoboth, and Calah, and Resen between Nineveh and Calah: the same is a great city." Then from Canaan, the grandson of Noah, descended Sidon, and the children of Heth, and the Jebusite, and some other eight tribes of people.

It is thus quite clear that the separation and dispersion of mankind began in the second generation from Noah, and that it embraced most, if not all, the families of that generation. Then, this conclusion is further proved by the fact that the countries possessed were originally named after "these fathers of nations." In many cases they bear the names in question to this day. "Without the aid of learning, any man who can barely read his Bible, and has but heard of such people as the Assyrians, Elamites, Lydians, Medes, Ionians, and Thracians, will readily acknowledge that they had Asshur, Elam, Lud, Madai, Javan, and Tiras, grandsons of Noah, for their respective founders." And this is equally true of many others.—(See Dr. A. Clarke, and others, on this subject.)

We find, indeed, branches and sub-branches of these families, as they were still farther dispersed, also giving their own and their children's names to the new settlements which they formed. Thus, some nine or ten nations took their names from the descendants of Noah's grandson, Canaan, who settled in Palestine. Then we find the different branches and sub-branches of the Mizraim spreading over Egypt, and over the

countries north of Judea. The Emim, Anakim, Horim, Zamzummim, Rephaim, Avim, and Philistim are other sub-branches, many of them giving names to the countries which they inhabited.

The sons and grandsons of Shem and Japheth were, we learn, dispersed in a similar manner, leaving their respective names impressed upon the peoples and nations descended from them, and on the countries which those peoples and nations possessed.

Hence, notwithstanding all that has been supposed and asserted to the contrary, we feel ourselves warranted to infer an early dispersion of mankind after the flood; and thus a comparatively early peopling of a large part of Asia, Africa, and Europe, and even America, by tribes and nations descended from the three sons of Noah. Such an early dispersion, and also the admission of the elapse of a large amount of time, are quite necessary to enable us to account for what we learn from Moses, as well as from fragments and monuments of Egyptian history, respecting "nations, great and many" which had risen to eminence, had founded dynasties, and which, through long-continued wars with other nations of the same original family—the Mizraim of Egypt—had perished long before Moses led the Israelites out of that country to conduct them to Canaan. And we would ask, Why this harmony between deduction and incidental historical statement, if the whole is not founded on fact?

But although, on these and other kindred grounds, we contend for an early and for a comparatively extensive dispersion of the Adamic race of mankind after the flood, we yet believe that it would be hundreds, and in many cases even thousands of years, before the more distant parts of the globe would be reached and peopled by that race. And thus, all other things being equal, we should expect that the more distant any region was from the original point of distribution, the fainter would be the traces of national history found among its present inhabitants. For example, their knowledge of the deluge, of the sudden confusion of tongues, and of their own original ancestors, would become more and more dim and uncertain, the more widely that the different sub-branches multiplied and spread themselves over the earth. Both the hunting and pastoral tribes of men, as they wandered still more distantly from the primal region, would soon, more or less, forget these events, and confound them with events occurring in much later periods of time. Fragmentary portions of different and distant events would become more and more complicated in one imperfect national tradition, most difficult to unravel, and to separate again into its primal elements; a conclusion that is confirmed by all experience and observation.

And this conclusion will also hold good with regard to the period before the flood. If men were dispersed over the earth before that event, they were all destroyed by it, and must have left the monuments of their ex-

istence in the countries which they possessed. But the localities distant from the central part of the second dispersion would not be re-occupied for some hundreds, perhaps not for some thousands, of years after the destruction of the first inhabitants; and, consequently, all other things again being equal, the more distant any locality from the central point, the less likely would the present inhabitants of such localities be to be able to account for any remains or monuments left by the perished antediluvian tribes. Thus, in America, and in Southern Africa, and in most of the countries of Europe, we should not expect the present inhabitants, however primitive, to have the most dim tradition respecting any remains belonging to men who lived before the flood. Should they have left such remains, whether ruined cities, as in America, or lake-dwellings, as in Switzerland and Ireland, or their own skeletons and flint implements in gravels and caves, the nations now inhabiting these countries would have no knowledge of them, and no tradition respecting them, because their earliest ancestors did not reach these countries until many ages after the owners of these remains had been destroyed from the face of the earth.

It would be anticipating another branch of our subject were we now to proceed to apply these deductions in explanation of actual phenomena. At present we merely state them as suggestions supplied by the biblical history of man, and as fairly and legitimately inferred from that history. That they marvellously agree

with many existing scientific facts, none can deny who have any acquaintance with those facts.

And, combining all the above considerations into one view, we shall be enabled to account for the peopling "of the whole earth," as the Bible affirms was the case, with the families descended from the sons and grandsons of Noah, without supposing several original human races being produced and first appearing in the different localities where they are now found. This supposition, in fact, is wholly based on conjecture. varieties of race can be easily and most satisfactorily accounted for without supposing for each a distinct origin. The Bible tells us of such varieties occurring among the children of the same parents. We need only name the familiar examples of Ishmael and Isaac, and Esau and Jacob; and probably there were still greater original differences between the three sons of Noah and their families. Thus, the name Ham means burnt or black, and, in all likelihood, was given to the person bearing it on account of the colour of his skin. Then, in addition to these original differences, we must take into consideration the operation of climate, situation, habits, and soils, with all their varied influences, repeated and prolonged, and, in peculiar cases, greatly These, as has often been shown, are quite intensified. sufficient to account for all the varieties of race which the different nations of mankind present. And, if all such differences can be thus accounted for, then to make such differences the ground of theories evidently

hostile to the statements of the Bible, is, we humbly submit, a course unworthy of science, and which a sound philosophy ought to reject. To contend for such theories in opposition to the decisions of the word of Eternal Truth, is like attempting to storm the adamantine fortress with "the small dust of the balance," or by the empty declamation of the threatening but powerless adversary.

It is at this point that we shall close our review of the biblical history of man. Our primal object was to consider that history only so far as was necessary to correlate it with man's archæological and geological history; and, to do this, it does not appear to be needful to follow it down any farther than to the time of the patriarch Abraham. It is highly probable, at least, that all the phenomena from which it has been attempted to deduce the non-Divine origin and great antiquity of man existed at this period; and hence to follow man down the stream of time any farther would be beside our present purpose.

We may now briefly recapitulate the principal points embraced and arrived at in the discussions of this chapter.

First, we have shown that in various and harmonious statements, the Bible declares man's Divine origin; and also that all the various races and nations of mankind, however widely scattered and diversified, have all descended from one original human pair, directly created by God Himself, and

that nature and tradition offer no contradiction to this inspired fact.

Secondly, we have shown that the Bible does not absolutely determine the date of man's creation; and that it is highly probable, if not absolutely certain, that the time which elapsed between the creation and the flood, and between the flood and the birth of Abraham, is, in both cases, much longer than is allowed in our generally received chronological systems.

Thirdly, we have shown that many considerations go to prove that the distribution of mankind in the earth before the flood was much more extensive and prolonged than has generally been hitherto supposed.

Fourthly, we have shown that the language of Scripture declares that the deluge was coextensive with the distribution of man,—that it destroyed all men, with the exception of the persons in the ark, and that its physical and instrumental causes would produce the most extensive and stupendous effects.

Fifthly, we have shown that, after the flood, the earth was repeopled by the families and nations descended from the three sons of Noah.

All these points directly bear on the subject of man's antiquity, and will greatly assist us in solving its problems.

Respecting some of the above points, we feel a high degree of certainty. With regard to others, it is enough for our purpose that they are highly probable. In many cases, in meeting the opponents of truth,

we are content with being able simply to neutralise objections, and to balance theory by equally probable theory; because, by doing so, we really leave the Bible unassailed, and its testimony still fully enshrined in all its own force and truthfulness.

CHAPTER II.

THE ARCHÆOLOGICAL HISTORY OF MAN.

In this chapter we propose to consider the evidence which archæology supplies for the *unity* of the human race; for man's early appearance in different and distant parts of the world, both before and after the deluge; for his probable dispersion from some central region; together with the traditions respecting the events of his past history handed down by the nations; and man's probable deterioration in knowledge and mechanical art, in proportion to his wider departure from the central point from which his dispersion commenced.

SECTION I.

THE UNITY OF THE HUMAN RACE.

The unity of the human race embraces its Divine origin.-Archeology supplies no evidence of any other origin.—Men cannot seriously believe that man is descended from the ape, and there is no proof of this.—Structural differences no proof.—All such theories utterly fail to account for identity of moral nature.—Such theories would require prolonged miraculous interposition.—Divine action felt to be necessary in the first stage.—But this is not the only period requiring it.—More requisite when the developed creature is to become man.—God must directly impart the rational and moral nature.— Wretched substitutes for the biblical history.—Difficulties of such theories.—Absurdities.—Glaring folly to exchange the Bible for such theories.—The Divine origin of man taken for granted.—Difficulties not to be met by recourse to miracle.—Difficulties involved in supposing several original human pairs.—Hostile to Scripture doctrine. -All differences easily accounted for without this supposition.-The evidences for the unity of the human race abundant and peculiar .--Far outweighs all evidence for the contrary theory.-No distinct line of separation between the races of mankind.—The human race but one.

This seems also necessarily to embrace the Divine origin of man. But we are content to leave this fact where we left it in the preceding chapter. On this point we believe in the clear statements of the Bible; and in the absence of all contrary evidence in the case, feel compelled to reject all opposing theories as mere

speculation. Archæology, at any rate, furnishes no proof on which to conclude for man any other than a Divine origin. Ancient monuments, implements of agriculture, of war, and of the chase; works of art, tradition, and every other kind of ancient witness, are utterly silent on this momentous point. If they have any voice at all in the matter, it is one that proclaims a unity of origin and a oneness of descent. Respecting any other mode of original production of the races of mankind, they give no hint, and furnish no evidence. The theory of man's supposed lower origin is not seriously urged on any archæological grounds. Theories, having reference to such an origin, are, for the most part, based on structural and physiological phenomena found in the different races of men themselves. what evidence can such facts furnish to prove that the races of mankind were developed from some inferior forms, or that they have descended from such forms by a "law of natural selection"? Mere cranial difference, so long as the general structure of the human skull is preserved, can never demonstrate a difference of origin, much less can it ever prove that the formation of man is the result of a long series of changes, advancing onward until some "primordial form" took his shape, and assumed his structure.

We cannot, indeed, think that many persons in the ranks of science seriously believe that any race of mankind, much less that they themselves, have descended from the monkey or the gorilla. We would not do them the injustice to suppose that they have really committed themselves to speculations at once so entirely baseless, and so utterly degrading to all that is noble and distinguished in their nature and origin. We cannot, at least without a feeling of shame, conceive of a philosopher capable of the loftiest speculations, stooping from his own high level of manhood, to greet his great-great-grandsire in some ape or gorilla. If such an origin for man could be *proved*, we must, of course, submit to the degradation; but as it is *not proved*, nor pretended to be *proved*, we shall still, with full conviction, regard all men as children of one common father, and that father. God.

For man's development from inorganic matter through many intermediate forms of structure, or from some created primordial form, there is not the slightest The differences found in the cranial and general structure of men of different races, and in man's fossil remains, on which such conclusions are sought to be based, could all be paralleled by living specimens in this country, and from the remains of many of our present gravevards. Such differences, apparently so arbitrary, and occurring in all countries and among all populations, can never furnish the feeblest proof that man has descended from any inferior order of animals. Hence, such an inferred descent is the sheerest speculation. Then, to ground on such sheer speculations, theories which involve a direct denial of the words of Eternal Truth, is surely a course that is highly reprehen-

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sible, and which ought to put the vaunting pretensions of philosophy to the blush!

Then, again, if such theories are true, whence is man's identity of moral nature? In fact, how is he to obtain a moral nature at all? Out of what could this be developed? Has the most skilful physiologist, or comparitive anatomist, or careful observer of nature, perceived any sign of such a moral nature—of a conscience, of a sense of right and wrong—in any of the most highly developed forms of brute creatures, or found within them any power, or faculty, or latent tendency. from which such a moral nature could have been developed? In fact, do not the advocates of even the most plausible of such theories believe in a greater and more prolonged miracle than the one in which the advocates of the Bible are required to believe. Admitting that they believe in the Divine creation of "the primordial forms," and that these "primordial forms" were Divinely impressed with laws which, at the intended period, would insure their development into the human form; yet must they not admit the Divine interposition at each marked step in the progress, and especially must they not do so when the developed creature becomes a human being, when it attains to the rank of a bona fide species under the genus homo? In regard to the intellectual faculties, to moral nature, and to the power of varied contrivance, the gulf between men of the lowest type, and brute creatures of the highest, is so wide, is so immense, that at whatever point manhood is reached by

them, nothing but direct Divine power can conduct them across it. The immortal spirit and the rational and religious nature must be inspired into the physical frame by the direct act of Omnipotence.

Thus nothing is gained by such uncertain and cumbrous theories but an increase of the miraculous agency, the admission of which the advocates of such theories seem most anxious to shun. The higher nature of man, the nature which in lofty thought and dread responsibility links him with the Infinite, must be "the gift of God," or result from His direct omnific fiat.

On natural principles the supposed changes are impossible. Hence Divine agency is brought in to create the primordial forms, and to impress such forms with laws requisite to insure their development, at the determined time, into the human form. Here direct Divine interposition was felt to be necessary, and it is admitted. But this primal stage is not the only point of insuperable difficulty. Profounder and much more complicated problems are involved in the case, and demand solution. If the laws said to be impressed on these primordial forms were intended to embrace the development of the intellectual and moral, as well as the physical nature of such forms, did those laws begin to operate at once, thus gradually, and during the course of thousands of ages, forming races of moral and intellectual beings? If so, then were not such primordial forms men from the first moment of their creation? And did they not thus essentially, and in toto, always differ from the ape or the monkey?

Or is it supposed that for some millions of years these said laws remained latent, being kept in mysterious abeyance, until, at the period when the requisite physical development should be reached, they should at once spring forth into active operation? But if so, what should keep them latent? And, if kept so long latent, what, at the right moment of time, could arouse them into so sudden an assertion of their hidden might and being? In the view of such questions, and of our utter inability to answer them, does it not appear absolutely necessary for the Almighty Creator directly to interpose to "make man," and to give the intellectual and moral nature, which so eminently distinguishes man, and which, even in his lowest forms of mental and moral degradation, places him on a pedestal inconceivably above the highest irrational creature, in which real intellect, and the awful feeling of responsibility can have no place!

And are we to substitute such a theory of impossibilities for the simple yet majestic account furnished in our Bibles? "Let us make man in our own image, and after our own likeness." "Verily, the wisdom of man is foolishness with God!" What theories will not men embrace "to put God far from them," and to shut out from their thoughts the awful nearness of the Infinite One implied in the Scripture assertion, that "in Him we live and move and have our being."

Nor are those already named the only difficulties involved in the theories in question. If all mankind have descended from one or more primordial forms, was the development confined to one of the descendants of such forms, or did it extend to several of them, or did it embrace them all? If the first supposition be maintained, then the laws said to be impressed on the primordial forms could not be conveyed by generation, for in that case they must be conveyed to the whole offspring; if, therefore, the laws are to be limited to one descendant the Creator must interpose to impress the said laws anew on some one individual of the first descendants selected for the favoured purpose. And so on from generation to generation, Omnipotence must directly interpose to limit the operation of these laws to the one favoured offspring.

Then, if it be contended that the operation of these laws was meant to extend to several descendants of the primordial forms, the difficulties would be still more numerous, and a still greater number of direct Divine interpositions would be required to limit their operation.

Hence, the most simple supposition would be to regard all the descendants of the primordial forms, destined to be the progenitors of the human race, as inheriting the laws in question; and then, even allowing that in the struggle for existence many of the weaker descendants would die out, yet in the course of myriads of ages, even the stronger types would multiply to thousands, and even to millions; and thus, by the

time that they attained to the dignity of manhood, the human race would have more than a million-fold origin! A number surely sufficient to satisfy the most eager pluralist.

Nor are we yet at the end of our chapter of difficulties. What was to secure the parallel development which must be supposed? Taking into consideration the many modifying influences of climate, soil, scenery, and of other circumstances, what was to insure the equal progress of creatures inhabiting so many different parts of the earth? Or is the idea of anything like parallel development discarded? And is it admitted, as must have been the case unless prevented by miracle, that some of these forms attained to perfection before others? Thus, was manhood attained to sooner in Asia than it was in Europe or America? so, then one human race must have seen some other race first acquire its manhood! Or, if it is supposed that these prolonged developments occurred in distant and unconnected localities, what then must have been their wonder when they first subsequently met each other!

Then, again, in this race of progression, did the male and female offspring always keep equal pace? Or did the higher sometimes unite with the inferior forms, and thus cause the process to retrograde a few steps? Then, further, did all the several and ever-increasing types always keep distinct and separate from each other? Or did the progenitor of one type of mankind sometimes

unite with an individual of another type, and thus produce a new type—a sort of hybrid?

These are only a few of the difficulties and glaring absurdities legitimately involved in all the theories of development. And such theories we are asked to substitute for the decision of Divine revelation! Yes, we are asked to give up our belief in one simple, grand, and stupendous miracle, a miracle worthy of the maiestv and wisdom of the infinite God, for a most cumbrous theory, for which there is no evidence, which would necessitate an endless direct Divine interposition, and which, although flattered with lofty epithets of liberal and philosophical, would plunge us into a thousand absurdities! What but the most glaring folly, or the most blinded prejudice would make the exchange! Believers in the truth of the Bible, hold fast your intelligent faith in its sublime statements; as yet philosophy has nothing to offer you at all comparable to its Divine teaching. She may profess to pity your weak prejudices, and may scorn your simple faith; but she demands of her disciples the belief of theories, which, although adorned with learned phrase, and graced with philosophic garb, are yet crowded with impossibilities, and which are as absurd as they are weak. When fully and fairly looked at, reason herself recoils from them, and finds her only safe ground of conclusion in the declarations of revealed truth.

We therefore take for granted the Divine origin of

man. Apart from the Divine authority on which it rests, it commends itself to our acceptance as involving unspeakably less of difficulty, and requiring unspeakably less of miracle, than do the theories which we are requested to substitute for it.

We may, perhaps, be told that the authors of some of these theories do not shut out the creating action of the great First Cause, but only that they put that action farther back in the series of creature existence; and, moreover, that by asserting that through the laws in question, and in spite of all these difficulties, God made the primordial forms develop themselves into men, they are doing homage to His power and wisdom, which were thus more illustriously displayed. not this taking refuge where, when pressed with difficulty, the most ignorant take refuge—in the power of "I believe that God could do it," is the resource of baffled ignorance; and now it would almost seem to have become the resource of baffled philosophy. But we take the liberty to remind both that this is no reason, and no escape from difficulty, unless the Scriptures tell us that the power of God was exerted in the cases which may be in question.

As we have already deliberately written, where the Divinely authenticated Bible tells us that a miracle was performed, we believe it, but we have no right to attempt to get out of our self-made difficulties by considerations of what the Divine Being is able to do. Of course, most of these difficulties are avoided by those

who simply assert that the present races of mankind have descended from several original human pairs. Such may not deny the Divine origin of man, but may only contend that, instead of one, God created several pairs of human beings, who formed the types from which the present races of mankind have sprung. But even this theory involves the direct denial of Scripture statement, and bring us into collision with the whole doctrinal system of Divine revelation respecting the federal character both of Adam and of Christ, respecting the fall of man, his universal claim to brotherly treatment, and man's redemption by the mysterious death of the Divine One, who, to ransom him, must assume his nature,-become one with him, and in that nature and relation, suffer and die in his stead. Unless, therefore, the evidence for this theory were so decisive and abundant, and so utterly opposed to all other modes of solution as to compel a belief in a several origin for mankind, surely every candid mind would pause before it embraced a theory involving such grave consequences. Any probable solution of the marked differences presented by the present nations and tribes of the earth, would be deemed preferable to theories which thus bring us into collision with the whole doctrinal system of revealed truth.

And such solutions have been found. Apart from all the original differences in the children descended from the same parents, in the *influence* of climate, of soil, of the physical character of the countries inhabited, of sea-coasts, of rivers, of forests, and of habits of association, existing in every variety of degree, and extending through thousands of years,—in the influence of all these, a sufficient cause has been found to occasion all the varieties observed in the present races of mankind. And if so, then why seek for any other? And, especially, why ignore this obvious solution, and substitute for it a theory which denies the express statement of Scripture? In the face of a solution so probable and so rational, and for which there is so much proof, contrary theory can be little better than reckless assertion. Contrary theory may be loudly proclaimed, and may be dogmatically assumed; but all the evidence on which it rests can be satisfactorily explained upon other grounds. Thus it rests on no grounds distinctively its own.

On the contrary, for the unity of the human race the evidence is both abundant and peculiar. Some few of these evidences are well put by the Rev. Dr. Adam Clarke, in his commentary. "In confirmation that all men have been derived from one family, let it be observed that there are many customs and usages, both sacred and civil, which have prevailed in all parts of the world, and that these could owe their origin to nothing but a general institution, which could never have existed had not all mankind been originally of the same blood, and instructed in the same common notions before they were dispersed. Among these may be reckoned—1. The numbering by tens; 2. Their computing

time by a cycle of seven days; 3. Their setting apart the seventh day for religious purposes; 4. Their use of sacrifice, propitiatory and eucharistic; 5. Their consecration of temples and altars; 6. The institution of sanctuaries, or places of refuge, and their privileges; 7. Their giving a tenth part of the produce of their fields, etc.; 8. The custom of worshipping the Deity barefooted; 9. Abstinence of the men from sensual gratification previously to their offering sacrifice; 10. The order of priesthood and its support; 11. The notion of legal pollutions, etc.; 12. The universal tradition of a general deluge; 13. The universal opinion that the rainbow was a Divine sign or portent."

The evidence furnished for the unity of the origin of mankind is very manifold, and cannot, we think, be disproved. It unspeakably outweighs every supposed evidence to the contrary, whether drawn from differences of cranial structure, of the facial angle, or the colour of the skin. None of these are stable, even in the same tribe or race. All the varieties run into each other, presenting every degree of intermediate modification and change. No so-called type is found to be fixed. Hence, writers on the natural history of man, and authors of ethnological systems, all differ in their classification of the typal forms, and in the arrangement of the nations of mankind under them. That eminent writer on the subject, Dr. Prichard, says, "Numerous are the divisions which the different writers have adopted in distributing and classifying the varieties of the human family. Amongst those who consider mankind as made up of different races, no two writers are agreed as to the number of separate tribes. As there is no fixed principle of division, it seems to be, in a great measure, arbitrary, and left to the choice of individual writers, whether they shall enumerate more or fewer of such groups; and it happens that every ethnologist subdivides what his predecessor had connected, and brings together some which he had separated."

The simple truth is, there is no distinct line of separation between them. Shades of difference are almost endless. Take what part of man you will as the basis of investigation, and as the starting-point of comparison between the various races of men, and you arrive at the same conclusion. Many of the individuals whom we are compelled to group under the different types, are found widely diverging from them, and approaching to other types. Varieties of all shades fill up the intervening spaces; so-called types run into each other. The highest and lowest forms of structure are linked together by other forms imperceptibly merging into each other. The whole space between the darkest negro of the African swamps, to the fairest belle of our European cities, is filled up with intervening shades of colour. And the most perfect cranial development and the largest facial angle, are but the zenith of a gradual and imperceptible ascent commencing in the lowest skull, and the most backwardinclined forehead.

Hence, the conviction reached by the most able and enlightened writers on the subject is, that the human race is but one, and the many relations and interlacings of their language, their several modes of life, their arts, however rude, their common moral nature, their similar moral sentiments, their consciousness of some fearful degradation in the past, and of some final future doom, and a crowd of other considerations, most decisively prove the truth of the declaration of Holy Scripture, "That God hath made of one blood all nations of men to dwell upon the face of the earth."

Nor do man's fossil remains form any exception. As yet there is no proof that the persons to whom such remains belonged differed more widely from the present types of mankind, than the latter do from each other. If antediluvian, we should expect them to differ in a marked degree from all present races, on whom external influences have been operating for many thousands of years. But more of this in the sequel.

SECTION II.

ARCHÆOLOGICAL EVIDENCES OF MAN'S EARLY APPEARANCE ON THE EARTH.

Man's early appearance on the earth after the flood.—Early peopling of Egypt and Palestine.—The proofs of long periods of time.—Manetho and Josephus.-Their king Menes, and the great works attributed to him.—Menes not Mizraim.—Long periods may underlie the mythic epoch.—Populations do not form kingdoms in brief spaces of time. -Two Egyptian dynasties.-Surrounding nations are similar proofs of a long period of time.—India and China probably peopled nearly as early as Egypt .- Period before the deluge .- Less certain evidence.-Men must have existed in these lands before the flood, and must have left their remains .-- Difficulty of separating ancient deposits.—Probable position of antediluvian remains.—Few remains vet found.—Great antiquity claimed for them.—The deluge a more probable solution.—Stone implements found by the Government survey, similar to those of Europe, collected in Madras and Arcot districts.-No human bones found with them.-Not any evidence of the changes asserted.—Several points suggested by these implements.—In the same geological position as those of Europe.— Their state such as might be expected.—India and Egypt will doubtless furnish more evidence.-Depths of the Nile alluvium.-Herodotus .- Dr. Shaw .- Ancient kings of Egypt .- Date of Luxor. -Biblical and scientific deduction agree with the chronology of Septuagint.—Proofs of man before the flood, and of his destruction by it.—Human remains in India.—In Egypt.—These point to a deluge. -Future discoveries not expected to invalidate this conclusion.-More remains confidently expected.—Those found are in the position we should predict for them.—The same evidence furnished by European deposits.—Proofs of state not of date.—Their age not to be determined from their position.

We now proceed to inquire if there are any archæological proofs tending to corroborate our deductions respecting the early and extensive distribution of man on the earth. Are there any fragments of ancient history, any monuments or works of art, or any other human remains, from which we may legitimately deduce the same conclusion? All these questions may be answered in the affirmative. Evidence of all the kinds mentioned exists, and can be produced.

From the Bible itself, so far as the period after the flood is concerned, we have inferred an early peopling of large portions of Asia, and of Upper and Lower Egypt, in Africa; and fragments of Egyptian history, as quoted from Manetho and others, by the Jewish historian, Josephus, prove that such must have been the case. True, Josephus applies what is related by Manetho of certain invaders and foes of Egypt, to his own ancestors, the Jewish nation. But in a most able paper on the nations in question, Miss Fanny Corbaux has clearly shown that the Jewish historian was mistaken respecting them; and has proved that the historical notes of Manetho refer to nations of Hykos, or Shepherd Kings, who invaded Egypt in the reign of their native king, Timaus, and who reigned over that country for a period of two hundred and sixty years; and who, after maintaining a protracted war with the native Egyptians, were at length conquered and expelled by them from Egypt, before Jacob and his family went to dwell there in the deserted province or land of Goshen. And all these conclusions are confirmed by monumental evidence. By a variety of figures and inscriptions preserved on such monuments, these ancient historical events are vividly represented to us to the present day. (See the elaborate papers of the above-named lady in the "Quarterly Journal of Sacred Literature," for the year 1852.)

If, then, nations occupying Egypt and Palestine had become so multiplied and organized, and had risen to so much political greatness; if they had maintained long martial struggles with each other, alternately conquering and being conquered, until at length one party is finally vanquished,—and figures of them, in every posture of subjection and vassalage, appear on monuments designed by their conquerors to perpetuate the memory of their utter overthrow,—we cannot resist the conclusion, that events so varied and important, and necessarily so slow in their occurrence, must cover a long period of time; and thus, that Manetho's list of kings and dynastics does not exaggerate the number of years that would be required for their accomplishment.

Nor must we altogether overlook the period which may, after all, be indicated by the mythological portion of ancient Egyptian history. We do not of course believe in its reign of gods and demigods, and their thirty thousand years of government. But both mythical persons and events have generally some foundation in truth; and in this case, may reasonably be supposed to denote the lapse of a considerable period of time, be-

fore the reign of Menes, the person with whom the more authentic portion of ancient Egyptian history begins. Kings, of course, suppose kingdoms; and these do not spring up from a single person or family at *once*, but only in the lapse of ages.

We are aware, that some regard this Menes as being identical with Mizraim, the second son of Ham, and grandson of Noah. Lower Egypt was doubtless peopled by the descendants of this patriarch; but it is very questionable whether Mizraim was the Menes of Manetho and of Herodotus; because the works attributed to him by these historians appear out of all proportion with any resources which the patriarch Mizraim could possess. And even allowing that he lived some hundreds of years, and that his reign must be dated from the latter portion of his life; yet to say nothing of the additional time we thus gain, we can scarcely conceive, that at this early period, the Mizraim could be so multiplied as to be able, during the reign of their first progenitor, to perform the great work attributed to Menes. Herodotus informs us, "that he protected from the inundations of the Nile the ground on which Memphis was afterwards erected. Before his age the river flowed close under the ridge of hills which border the Lybian desert, whence, it is more than probable, a large branch of it at least made its way through the valley of the Fayoum into the Mediterranean. To prevent this deviation, he erected a mound about twelve miles south from the future

capital of Egpyt, turned the course of the stream toward the Delta, and led it to the sea at an equal distance from the elevated ground by which, on either side, the country is bounded." This Menes, moreover, is said to have been a great general, and to have made warlike expeditions into foreign countries.

Now, even admitting considerable exaggeration in these accounts, they do not appear to be at all applicable to Mizraim the son of Ham, and father of the Egyptians, but to some monarch who reigned over a numerous people, and who could command resources of men and means necessary to accomplish such a great and difficult undertaking.

And, looking at the matter thus, it only seems reasonable to suppose that some truth must underlie the mythic period of Egyptian history, and that that history covers a considerable period of time.

But, be this as it may, and even supposing that Menes was the first king of the Mizraim of Lower Egypt, yet even then we must suppose that several generations preceded the commencement of his reign. Populations sprung from one man, and become sufficiently numerous and strong to form even a small kingdom, must be the work of time and the growth of some ages; then, to these ages, be they more or less, we must add the 253 years of the first dynasty, beginning with Menes and ending with Timaus; and the 260 years of the second dynasty, ending with the expulsion of the Shepherd Kings; making, in addition

to the time which elapsed before the commencement of the reign of Menes, a period of 513 years. And taking all these facts into the account, we shall, we think, see good reason to admit, as far the most probable, the long period which Josephus and the Septuagint assign for the occurrence of these events. For it must be remembered that they all occurred before the time at which Joseph was carried a captive into Egypt.

Nor are these facts the only evidence in the case. Manetho's account supplies clear proof that the surrounding nations were equally advanced in numbers and political importance with the Egyptians. Peoples, both of Hamite and Shemite origin, were formed into kingdoms around them, and were their equals in power and ambition, and were the objects of their dread. Babylonian and Assyrian monarchs swayed their sceptres over numerous peoples; and "the cities of the plain," and the hills of Palestine, were repeatedly the scenes of deadly national strife.

Then India and China were probably peopled nearly as early as Egypt and Palestine. We are told "that the remembrance of the Shepherd Kings is not extinct, even among the tribes of Central India;" a fact which at once clearly establishes their connection with the other descendants of Noah, as well as their early settlement in the country which they still inhabit. It is scarcely necessary to say that we do not believe in the extrawagant claims to antiquity set up by the Hindoos and Chinese, still there may be some truth lying under

such claims; and especially as, to some extent, they would thus harmonize with the deductions obtained, both from biblical and Egyptian history. Like those kept by the priests of ancient Egypt, the sacred books of the Hindoos and Chinese may include much exaggeration, and much that is merely mythical, and it may often be extremely difficult to separate the true from the false, but it would be rash in the extreme to assert that the whole was utterly unworthy of credit.

But in our next backward step we have still less to guide us. With the exception of the Sacred Scriptures themselves, we have no historical record, at least, none that can be proved to be such, respecting the nations that occupied these lands before the flood. They may have left their remains behind,—perhaps monuments, perhaps their pottery, and perhaps the gods and demigods, celebrated in the heathen mythology, were the "heroes," "the men of renown," who played a leading part among the antediluvian nations,—but of this we have no certain proof, and are thus, in a great measure, left to conjecture. We do not mean that we are left to conjecture with regard to the simple fact itself, for that these lands were inhabited before the flood is morally certain. Being comparatively so near to the central point of dispersion, they would be among the first to be inhabited by mankind. But we have not, as yet, any decisive evidence of their existence. decisive evidence: for, considering how difficult it would be to separate any antediluvian from postdiluvian

remains, it may be that some that have been assigned to the latter really belong to the former. To elucidate these points, a much larger amount of research and careful inquiry is needed. Facts bearing upon them must be collected with the utmost fidelity, and be sifted and analysed with the most scrupulous regard. If our deductions are correct, facts must exist. Nations could not have existed for thousands of years, and then have suddenly perished, without leaving, in the countries which they inhabited, some evidence both of their active industry and of their destruction.

We must therefore seek for other than written and monumental evidence. The most ancient works of art and the remains of man himself must be carefully consulted. But here serious difficulties present themselves. How are we to draw the line of separation between the deposits thrown down before the flood, and those thrown down by the flood, and those that have been thrown down since the flood? Probably no certain line can be drawn. Nevertheless, if at a considerable depth beneath the present surface, deposits of a peculiar character should be found, and containing works of art, and human remains, differing somewhat widely from the present or past historical populations, and covered by other beds of some thickness, having no such remains in them, such cases would seem to supply us with the data of which we are in search; and the deluge would enable us to account for the great antiquity claimed for such deposits, without supposing, either a preadamite race,

or that the Adamic race itself dates back some hundreds of thousands of years.

That the races of mankind descended from Adam peopled Egypt and the surrounding countries at the time of the flood, and therefore, that the flood embraced all these countries, is, according to biblical deduction, a matter of certainty. Hence, remains of antediluvian man must exist in them; and, if only few of such remains have been identified, it is because they have not been sought, or that they have been overlooked. We feel a strong conviction that they will be found, when a competent and careful search is made for them. The few works of ancient art, and the few remains of man himself, and of the animals cotemporary with him, already found in the valley of the Nile and in the river valleys of India, are, we are persuaded, but the earnest of the rich harvest of discoveries which await the diligent explorers of these lands, when their valley deposits and the contents found in their caves and fissures are properly searched and analysed. Toward this desirable result, as yet little has been done. The valleys and caves of Upper and Lower Egypt, of Palestine, and of India, have not, in any considerable degree, been geologically examined. True, in the last-named country, the members of the Geological Survey have effected a good degree of service, and we gratefully accept the facts which they have supplied.

R. Bruce Foote, Esq., belonging to that survey, has recently published a work "On the Occurrence of

Stone Implements in Lateritic Formations in various parts of Madras and North Arcot Districts." These implements were collected from forty-seven different places in the above districts, and bear, we are told, "a most striking resemblance to the well-known archaic flint implements of the valleys of the Somme, Seine, Thames, Ouse, etc., in France and England." "The long cat-tongue, the sub-ovate and leaf-like, the oval, and other shapes, being present among the larger forms, as well as the broad-edged, hatchet-like specimens, besides flakes, and an arrow-head"—these implements, which are made of the native quartzite, are imbedded in the old undisturbed lateritic ferruginous alluvium of the country, not to be confounded with the much younger fluviatile alluvium since deposited.

Such are the leading facts of the case. With the inferences drawn from these facts, and with the speculations respecting man's great antiquity based upon them, we have not just now to do; at present we only refer to them as in part furnishing the data of which we are in search. If the said lateritic alluvium, containing these quartzite implements, were thrown down before the flood, and by it, it might be expected, both in its character and fossil contents, to differ from the more recent fluviatile alluvium overlying it. It would thus present the phenomenon for which we should look. The main defect in these late Indian discoveries is, that they do not embrace any remains of man himself. How is this to be accounted for? Whatever solution this

question may receive, it will furnish no more evidence in favour of the great antiquity claimed for man, than it will in favour of the supposition that this alluvium is not older than the antediluvian period. The advocates for man's great antiquity can no more account for the apparent absence of his own remains than we can. That the men who made these stone implements, and who, on every scheme, lived before the flood, utterly perished, and left no skull, no bone, nothing but their stone implements, to testify of their existence, would be far too much to assume. At present, perhaps no positive conclusion can be come to on the point. We must wait for more evidence to enable us to elucidate it. As the matter now stands, the facts are no more in favour of man's great antiquity, than they are of his comparatively recent origin. We can, to say the least, as fully account for the fossil contents of these lateritic deposits of India on the supposition that they are antediluvian, as can others who suppose that "these stone implements tell of a past race of men, frequenting what was then a shallow sea, in which the present hills were islands, and fashioning the silicious rocks of the country into tools and arms by a precisely similar process, and in precisely similar shapes, to those adopted by the old flint folks of Western Europe." That the deposits containing these implements, some of which "are as perfect as when freshly made," were thrown down before and at the flood, and were probably both increased and greatly modified by it, is a supposition as rational, and which, to say the least, admits of as much being said in its favour, as to suppose that "the valleys of France and England have been cut down some ninety feet since our archaic implements were mingled with the loam and gravel;" and that "the lateritic gravels of Madras and Arcot have risen up bodily, and been grooved and channelled by the existing water-courses since the quartz-workers left and lost their tools on the shores and shoals of the lateritic sea."

Where, we ask, is the evidence of all this? Admit that the deluge occurred some six or seven thousand years ago; admit that deluge in its scriptural form; admit also, that, at the time of the deluge, the Adamic race had been on the earth for from two to three thousand years; and admit, lastly, that some considerable time elapsed between the deluge and the repeopling of the countries in question,—and we have all the conditions requisite to account for these tool-bearing deposits.

But, at present, we wish mainly to confine ourselves to the archæological aspect of such tools. Are they the work of our antediluvian forefathers? Who is in a position to say that they are not? And if no person is in such a position, why seek for them any other origin? With such a probable solution in our hands, why boldly rush on theories which ignore the biblical deluge, and which bring us into direct collision with the teachings of the eternal Spirit? With probable solid ground so near to rest upon, even philosophy herself, it might be

supposed, would pause before she adventured herself over a gulf so profound as that presented by hundreds of thousands of years.

But ere dismissing the consideration of them, there are two or three points suggested by these stone implements, on which we shall venture a few remarks. of these is, their geological position. On this we shall not now dwell: but it must strike us as an interesting fact, that these Indian implements are found on a similar zone, and in similar deposits, to those in which they are found in Western Europe. They are doubtless, then, of the same relative age. They may not, throughout their whole thickness, be exactly identical in point of past time. The lower of the Indian deposits may be somewhat prior in date to those of Western Europe; still, the authors of the stone implements in India, and of the flint ones of France and England, had, in a general sense, a contemporaneous period of existence and a simultaneous close.

Then the identity of form and of the mode of manufacture of these implements, both of India and Europe, is another very suggestive fact. Though the one set is formed out of the quartzite of India, and the other set out of the flints of Europe, they present all the same kinds and forms. Such facts, attested as they are by competent witnesses, speak volumes in favour of the unity of the antediluvian nations—of their past intimate connection, and of their dispersion from one primal region. If the authors of these implements were distinct

and independent species of men, sprung from several original human pairs, or developed from distinct primordial forms, whence this strange identity? such distinct species of men should all make the same arms and implements, for war and for the chase, and for domestic use; and that they should all make them "in precisely similar forms, and by a similar process," is inconceivable: and to believe this, is to believe what is infinitely more unlikely than is anything which the Scriptures require us to believe. The probabilities against such a supposition are innumerable. The only rational, the only philosophical, mode of accounting for such a number of coincidences is, that they all had the same origin, and that, in the first periods of their history, all these wide-spread tribes of men were one people and sprung from the same original stock. ference can be more fair and logical than this. Accepting the facts as given by the advocates of the contrary theory, we see no possible way of accounting for such facts but the one just stated. They thus stand as indubitable evidence that the authors of these ancient implements, whoever and whatever they might be, all had the same origin, and were "all made of the same blood." We do not see any possible grounds on which this obvious conclusion can be disputed; nor do we see any real ground on which an opposite conclusion can legitimately be based.

Another point of remark which these implements furnish is, the *state* in which they are found. We are

told that "Some of them are as perfect as when freshly made, and that others are much worn by drifting." state of things such as we should expect to find. It is fair to suppose, as a general rule, that the water-worn implements are the oldest. And they may belong to all the generations of men who peopled these lands before the flood. During the lapse of all these generations, it is natural to suppose that many of these implements would "be left and lost" on sea shores and on the borders of rivers, and would thus before, as well as at the flood, be brought within water-action, and would be rolled and worn. Some few of the implements thus lost might soon be covered up, and escape being much worn; but the majority of the older ones would be more or less subjected to drifting, and would thus present a worn appearance. As a whole, the most perfect would be the newest. Those made only a few vears before "the flood came and took" their authors away, would not be subjected to water-action, except by the deluge itself.

Then it does not appear that the lateritic bed containing these stone implements is of very great thickness, and therefore does not indicate the lapse of long periods of time. A few thousand years, aided and consummated by the effects of the deluge itself, would seem sufficient to accumulate the deposit.

We cannot, however, think that India will furnish no more evidence on the subject under review. Man's own remains will doubtless yet be found. Those found already are said to indicate no great antiquity. But we cannot conclude that it will always be so. In these lateritic beds, in and beneath river gravels, and in caves and fissures of rocks, we confidently anticipate the finding of the remains of the makers of these stone implements, and bearing the same relation to them as do the flint implements of our own gravels to the remains of man found along with them.

The same remarks apply to Egypt and to the adjacent countries. As yet they have furnished but few remains of man himself. Much evidence, perhaps, has been overlooked.

Some years ago the corps of scientific men who accompanied the French expedition into Egypt, endeavoured to measure the depth of alluvial matter which has actually been deposited by the river. By sinking pits at different intervals, both on the banks of the current, and on the outer edge of the stratum, they ascertained satisfactorily,—first, that the surface of the soil slopes downward from the margin of the stream to the foot of the hills; secondly, that the thickness of the deposit is generally about ten feet near the river, and decreases gradually as it recedes from it; and thirdly, that beneath the mud there is a bed of sand analogous to the substance which has at all times been brought down by the flood of the Nile.

Such data is valuable for comparison. Herodotus informs us, that in the reign of Mæris, if the Nile rose to the height of eight cubits, all the lands of Egypt were

sufficiently covered; but that in his own time, not quite nine hundred years later, the country was not covered with less than fifteen or sixteen cubits of water. addition of soil, therefore, during this period, was equal to seven cubits at the least, or a depth of one hundred and twenty-six inches was deposited in the course of nine hundred years. "But at present," says Dr. Shaw, "the river must rise to the height of twenty cubits, and it usually rises to twenty-four, before the whole country is overflowed." Thus, according to this data, from the time of king Mæris, to the year when Dr. Shaw wrote the above, there had been a perpendicular accession to the soil of Egypt of twenty-two feet six inches. according to Manetho's list of Egyptian dynasties, between this Mæris and Menes, their first authentic king, a period of nearly a thousand years had elapsed; so that supposing only the same rate of deposition; for the whole period, there would altogether be added a thickness of forty-one feet. But the same rate of deposition would not take place. In lower Egypt especially, during the earlier periods, the rate of deposition would be much more rapid.

Hence, from the deluge to the present time, the Nile would probably deposit in the lower parts of its course a depth of sixty or more feet. We should especially expect this if we accept the chronology of the Septuagint, the correctness of which becomes all the more probable from its agreement with these independent deductions.

Then the same results are obtained from the examination of the foundations of the palace of Luxor. From the data hence collected, and according to the calculations based on that data, some 4760 years have elapsed since the foundation of Thebes was laid. would carry us back to 2960 years before the Christian era; and, consequently, according to the Jewish reckoning, to 612 years before the flood. But, if we accept the chronology drawn from the Septuagint, which carries back the flood to four thousand years before Christ, then, between the deluge and the building of the city of Thebes, there would be an interval of seven centuries. And thus, the deductions from the depths of the deposits in the valley of the Nile, and from the examination of the foundation of the palace of Luxor, would, in a remarkable manner, agree with the chronology of the Septuagint and with the whole of our previous biblical deductions.

We are aware that conclusions drawn from such data as these deposits furnish, cannot be regarded as absolutely certain. But regarding the conclusion at which we have arrived as only probable, it is surely preferable to speculations, which, from the same data, would carry us back to periods in the past, the distance of which is truly startling.

Then, of course, much must depend upon the localities examined. The depths will vary according to the points selected for measurement. As a general rule, the deepest deposits will be found in the lower parts of river valleys, and near their banks and mouths: hence, the

mean depth would be the best and surest basis for calculation. Let us see how such a mean depth would agree with the conclusion to which other considerations According to our biblical deductions rehave led us. specting the appearance of man in Egypt before the flood, and his destruction there by the flood, we should expect to find his remains at depths beneath the present surface of the country, varying from two or three to sixty or seventy feet. And, if found there,—and especially if the deposit containing his remains was overlain by deposits destitute of such remains,-we should claim for them an antediluvian date, and regard them as furnishing proof of man's destruction by the deluge, from six to seven thousand years ago. At any rate, such a conclusion, harmonizing as it does with biblical statement and deduction, must be infinitely preferable to theories which would, from similar data, but excluding the deluge, conclude an antiquity for man which no interpretation of the Bible can warrant. feel, therefore, that our solution of these phenomena is as rational and far more satisfactory than are the theories which ignore the deluge, and which would thus, on partial data, bring us to conclusions at variance with the dictum of Divine truth.

DEPOSITS WITH HUMAN REMAINS IN INDIA.

In regard to India, that distinguished authority, the late Dr. Falconer, acknowledges that "no remains of man himself have been found in the alluvial deposits of that

country, that would indicate for him any great antiquity." Still, on the ground that animals cotemporary with man have left their remains in apparently ancient deposits in the river Jumna, he assumes for him such an antiquity. But this inference may not be correct. Man may have peopled India before all these animals became extinct; still, they may have preceded him by many centuries. Hence there is no proof that he is equally ancient with them. Such deposits, moreover, as well as the lateritic alluvium near Madras, may be antediluvian, and may have been consummated by the biblical deluge. In fact, all these alluvial deposits of India, for which this great antiquity is claimed, appear to be similar in character; and before we shall feel ourselves warranted to accept that antiquity, we must be furnished with more conclusive evidence on the point.

HUMAN REMAINS IN EGYPTIAN DEPOSITS.

The alluvial deposits of Ancient Egypt have not yet furnished much more evidence than have those of India. According to Dr. Falconer, the only account of human bones having been found, is that supplied by Russegger, in Leonhard's and Brown's "Jahrbuck" for 1838. He says, "In the alluvium of the Blue Nile, at Duntai we found human bones. The structure of the bones was perfectly preserved, but the animal matter had disappeared. The surface was polished, and of a blackish brown colour; the substance was very hard, but not yet petrified. These bones were obtained from

a conglomerate." This conglomerate reminds us of the highly ferruginous gravel or lateritic alluvium of India, and of the gravels of France and England, in which human remains have been found.

If then, so far as archæological evidence is concerned, all these deposits can be accounted for by the action of water during the antediluvian period, and by those of the deluge itself, then they do not demonstrate for man a greater antiquity than is consistent with the teaching of the Bible.

Nor do we expect that any future discoveries will invalidate this conclusion; at any rate, we can afford to wait for the proof. We shall await that proof with the deepest interest, but without any anxiety. Real scientific and biblical truth can never be antagonistic, though our interpretations and speculations may make them appear to be so. Let Palestine, Egypt, Arabia, America, India, and other countries be diligently explored; and if man existed in them from six to seven thousand years ago, then we confidently assert, that the biblical deluge has occurred somewhere within that period and the present, and that man, and the animals associated with him, were destroyed by that flood; and, therefore, in these countries, remains of antediluvian man will doubtless turn up to reward the search.

Such a result we confidently anticipate. We do not forget that, for the most part, these countries remain unexplored. In the way of minute and careful examination, comparatively little has been done with regard to

the alluvial gravels and conglomerates of Palestine, America, Egypt, Northern Africa, India, China, and the more eastern parts of Europe. The few remains already discovered in India and in the valley of the Nile, show what a harvest we may expect to reap, when these. and other eastern countries, have been as thoroughly explored and examined, as have some of the western countries of Europe. Antediluvian men existed, and existed in large numbers, and probably in most of the countries of the world, and would leave their implements and works of art behind them, together with their own remains, and especially those of them who were destroyed by the flood, and these would be most likely to be buried in gravels and sands, some of such deposits being subsequently converted into ferruginous conglomerate or "laterite," by the abundance of calcareous and ferruginous matter, which would probably be held in suspension and solution by the waters of the deluge, and obtained by those waters from the immense amount of decaying vegetable and animal substances with which they would be charged.

It is a fact worthy of special notice, that the remains of man already found, are in the very position which we should predict for them, supposing them to have been thrown down *before* and by the flood. And we venture to predict, that it will be in similar strata that the remains of man will be found in the future.

THE HUMAN REMAINS FOUND IN THE GRAVEL DEPOSITS OF EUROPE.

These do not furnish any evidence to invalidate our previous conclusion. The deposits themselves are similar in position and character to those of India. Then the implements which they contain are made of analogous materials, and embrace the same forms. Having been much more extensively examined, the European deposits have furnished a larger number of specimens, and have also yielded more decisive evidence of the presence of man himself. In India and Egypt little has been discovered beside stone implements and a few doubtful human bones; but, in Western Europe, the flint implements found, for the most part, alone in our valley gravels, have been discovered in caves associated with human bones, together with those of extinct and recent animals. There is, thus, strong presumptive evidence that the persons whose remains are found in connection with flint implements in caves, were also the authors of those found in the gravel deposits of our vallevs. The contents of our caves have furnished the link of connection between the two classes of deposits, and it is thus a legitimate conclusion, that the two classes are of the same age, and owe their formation to the same general agency.

But before we proceed to adduce and weigh the archæological evidence which our European deposits supply, we shall make one or two preliminary remarks.

The first is, that, considered in themselves alone, these flint implements are by no means a certain cri-

terion of date: they are, rather, proofs of state, than of any period of time. With regard to civilization, and to progress in mechanical art, they are decisive proofs of man's mental and social condition; but, of themselves, and apart from other circumstances, they do not definitely point to any particular date of the past. Similar implements were in use only a few years ago in the islands of the South Sea and in Africa, and are still in use amongst some of the Indian tribes of America, and are found in barrows and burying grounds, some of which are probably not much older than the Roman invasion of this country. Of these, numbers are to be seen in our public collections, and especially in those of the British Museum. the implements themselves, we can infer nothing respecting the age to which they belong. The stone implements of the South Seas, and of the native tribes of America, belong to the present, as well as to past periods; while those of Europe belong to an age long since gone by. The flint or stone weapons of one country do not belong to the same period as do those of another country. Hence, of themselves, they prove nothing with regard to the antiquity, or otherwise, of the nations who may have inhabited these countries. They simply indicate the condition of such nations with regard to civilization, and the degree of knowledge which they possessed in mechanical art and in the use of metals. We may legitimately and confidently infer that the authors of such implements were low in the scale of mechanical art and of social development; but so far as past date is concerned, we cannot, from the implements themselves, infer that they are much older than the days of Julius Cæsar. They speak not of age, but of condition; they simply tell us what man was when he made and used the implements in question.

Another remark is, that the age of these implements cannot be positively determined from their position, or from the relation in which they are found with regard to other fossil remains that may be contained in the same deposits with them. Such other remains may be of anterior date; and may, by interment, or excavation, or by the action of water, have become subsequently mixed with those of man. Or the remains of man, such as flint implements, and other heavy bodies, may have been originally thrown down on the surface of deposits containing remains of anterior date, and by their own weight have sunk into, and become apparently mixed This would especially be the case if the previous deposit was made soft with moisture, the remains thrown upon its surface might then descend to considerable depths; and, if the whole were subsequently covered up with other materials, such as stalagmite or sand or clay, then the remains in question might be regarded as belonging to such an anterior deposit, and thus as being of the same age. In our valley and cave deposits, such sources of error are doubtless abundantly present, and may easily lead even the most cautious and candid explorer of them to false conclusions. principles thus laid down will be illustrated and applied in our subsequent pages.

SECTION III.

THE ARCHÆOLOGICAL EVIDENCE OF MAN'S ANTIQUITY SUPPLIED BY THE VALLEY AND CAVE DEPOSITS OF EUROPE AND AMERICA.

Remains of man in Canada.—In the Mississippi valley.—The latter show the institution of sacrifices.—Valley gravels of Europe.—At Abbeville, in France.—At Hoxne, in Suffolk.—In Cornwall.—Pickaxe of elk's-horn, human skeletons.—Similar deposits very general.—Remains of man and animals in caves.—Preliminary remarks.— Fossil contents of caves more recent than the boulder clay.—Appear to be of the same age.—Theories of explanation not applicable to every case.—The paucity of man's own remains.—Probable reasons of this.—Wookey-hole cave, near Wells.—The Belgian caves.—Languedoc caves.—Montpellier.—Brixham caves.—Caves in the Rock of Gibraltar.—Malta caves.—Remains of man in the beds and near the mouths of rivers.—Ancient canoes.

WE have already briefly reviewed the limited evidence for man's antiquity supplied by the valley deposits of India and of the Nile; we shall therefore confine our present remarks to those of Europe and America.

The remains of ancient man at present obtained from the latter country are comparatively few, and are, as it regards their age, of uncertain date. "The arrow and spear-heads, darts, hatchets or battle-axes, gouges and chisels, formed of all kinds of stone, chert, flint, copper, and other hard materials, which are found on

ancient battle-grounds, and in other localities in Canada, turned up by the spade or ploughshare, furnish but little evidence of ancient date. They may. and they may not, be very ancient. It would seem certain, in fact, that some of the stone gouges are comparatively recent, being found in some of the more modern Indian burial-grounds. But if it be true, as is asserted by Dr. Gibbs in his paper on the subject, that no arrow-heads are found in these more recent burialgrounds, then for such arrow-heads, and the implements associated with them, we might infer a much greater antiquity. Dr. Gibbs himself, however, does not venture to claim for them a greater antiquity than that of the Celtic period of Great Britain. But, from the doctor's own remarks, we should judge that they belong to different periods, and some of them to periods much older than the one he indicates. If some of them are exceedingly smooth, whilst the majority are rough, and are not dissimilar to the ancient flint weapons of the British Isles, for the latter, at least, we should be disposed to claim a similar antiquity. They may not, strictly speaking, be contemporaneous with them. Should they, as we are disposed to suspect, belong to the antediluvian period, and be the relics of men who inhabited the lands of America before the flood, we should expect them to be more recent by some centuries than are the similar remains found in Western Europe.

Whatever might be the form and relations of the dry

land, called "the earth," during the time that intervened between the creation of man and the flood; looking at distance alone, we should expect America to be peopled later, and by a thinner population, than were the lands more contiguous to the central point of dispersion. Still, these are only conjectures, so far as the age of these Canadian implements is concerned. There is not in the case any decisive proofs of great antiquity. They may date back to a period of four or five thousand years ago, and yet be postdiluvian. At least, regarded only in an archæological point of view, they do not warrant us to come to any positive conclusion respecting their real antiquity.

And we fear that the same must be said of the arrow and spear-heads, both polished, and in the rough state, obtained from the "altar places" and "sepulchral mounds" of the "Mississippi valley." All that we can positively affirm of them is, that some of them resemble those obtained from the drift of this country, and, therefore, that they may be of the same geological age. But as such remains are only proofs of the state of nations, and not of their age, we can build nothing positively certain upon them. In regard to this example, we could wish it possible to prove the remains of great antiquity. If it could be proved that these arrow and spear-heads of the Mississippi region, date back some six or seven thousand years, we should then conclude them to be antediluvian. And, in that case, they would supply a remarkable proof of the connection

of their authors with the Adamic race. Of their identity with that race, we could scarcely select a stronger proof. The institution of sacrifice, recognised to have obtained amongst them, most closely links them with the fallen but redeemed sons of Adam. Why altars and sacrifices, but as confessions of guilt, and as expressive of hope, that the offended Deity could be propitiated by the shedded blood of some victim? Then it is unlikely that sacrifice should be offered, unless at first Divinely instituted. What could prompt men to offer sacrificial victims to God, but the sense of necessity, and the knowledge or persuasion that the Deity required, and would accept, such sacrificial victims on their behalf. But these are the ideas which the Bible associates only with the Adamic race of mankind; and, therefore, whether the authors of these spear-heads were ante or postdiluvian, they unquestionably belonged to that race.

In a work by Messrs. Squiers and Davis, "On the Ancient Monuments of the Mississippi Valley," the authors say, "From one altar were taken several bushels of finely worked lance-heads of milky quartz, nearly all of which had been broken up by the action of fire."

But as the evidence of great antiquity in the case is not quite conclusive, we shall not press this important point any farther. Though an enormous antiquity has been claimed for some of the remains of man found in America, we think that, as yet, that country has not furnished any really decisive evidence of man's early appearance on the earth. Should it, however, do so in future, in the above remarks we shall have anticipated our own conclusions respecting them. We feel assured that they will only be found in *superficial* deposits,—and we have thus provided a niche in which to place them.

THE VALLEY GRAVELS OF EUROPE.

In the gravels found in the river valleys of Europe, the evidence for man's antiquity is much more abundant and decisive; and those who have widely and carefully examined that evidence, have presented it to us in a more tangible, reliable, and satisfactory form. will more specially appear when we shall proceed to examine it in its geological relations. The examples furnishing the evidence are numerous and wide-spread. It would, however, be beside our purpose, and swell this work beyond the limits we have fixed, were we minutely to examine all such examples. Nor is this necessary. All the examples very much resemble each other; the examination, therefore, of a few typical cases will be sufficient for our object, and will also form a sufficient basis for our conclusions. Other cases will pass under review, but we shall only stay to note and weigh what may be peculiar in them.

Such typical cases are found at Abbeville and Amiens, in the valley of the Somme, in France. These localities have been frequently and carefully examined, both by

geologists and antiquarians; and, therefore, except where doubt is expressed by themselves, we may safely accept their facts. The district of and around Abbeville has supplied flint implements in great abundance. Even granting that many specimens are not of human manufacture, yet numbers of them unquestionably are.

We will first endeavour to collect all the facts furnished respecting them. We need not give the sections in those cases where flint implements are only said to have been found. We do not question them, but we cannot confidently rely upon them. It will, therefore, be better to select for examination only the really reliable examples. Mr. Prestwitch, in his able paper on the subject, gives a section of a gravel pit at Menchecourt, near Abbeville. The whole section is about some thirty-two feet in depth. The following are the beds of the section: First, at the top of the section, there is a bed of gravelly clay, of variable thickness, in which no organic remains have been found; secondly, a bed of loam, some twenty-five feet thick, containing only a few much decomposed teeth of horse, and bones of ruminants and elephants, and "recorded" flint implements; thirdly, a bed of sand, from two to eight feet thick, with a bed of gravel some one foot thick at its base. To these two lowest beds, which may be regarded as one, the greatest interest attaches, on account of the flint implements, and the abundance of mammalian remains, and land, fresh-water, and marine shells, found in them. The bones mostly occur in or on the seam

of flint gravel; they are often entire, but the bulk of them are in fragments. The land and fresh-water shells are most abundant in the *sand*, while the marine shells are more common in the *gravel*.

Mr. Prestwitch gives a section of another pit at St. Acheul, near Amiens, and at a spot about eighty feet above the Somme. This section is from twenty to thirty feet deep; and, as in the preceding case, the flint implements and most of the bones are found in the gravel, and near to the chalk, on the uneven surface of which the deposit rests. But teeth and bones of animals are also found in the sand and marl above the gravel. "In these pits, blocks of sandstone are numerous and large, especially in the pits nearest the high road." "Entire bones are comparatively rare in these pits; but fragments, more or less worn, are tolerably common." "Some of these fossils are more or less bleached, others are coloured by the peroxide of iron present in some of the gravel."

Now the points more specially worthy of notice in these French deposits, are:—first, though at different levels above the river Somme, they are all evidently of the same age. Mr. Prestwitch, therefore, candidly acknowledges that the physical and the fossil evidence would lead to opposite conclusions. For this he assigns no reason. We shall endeavour to do so in due time.

The second point, specially worthy of notice, is the fact, that, for the most part, the flint implements and animal remains are found in the same beds. It is in

the gravel, towards the bottom of the sections, that they are the most abundant. Now for this fact there must be some special reason. What then is that reason? As far as we are aware, no adequate reason has yet been assigned by geologists. Why should these implements and animal remains be mainly confined to one and the same zone? This fact pretty distinctly points to one epoch for their production.

A third point suggested is, that these deposits of the Somme valley do not furnish any decisive evidence that the animal remains which they contain are really of the same age with the flint implements. They may and they may not. The facts of the case, apart from any theory, would seem to lead to a contrary conclusion. Had the animal remains, found in the same beds with the flint implements, embraced entire or large portions of entire skeletons, the same or a similar age might have been inferred for them. But, in some of the cases, even whole bones are comparatively rare, the majority being fragmentary and water-worn. Now, supposing that the authors of these flint implements were antediluvian, and that the deposits containing them were thrown down by the rivers of the antediluvian period, and were consummated by the flood itself, the above is just the condition of things that we should anticipate. If river floods occurred during the antediluvian period, these, as well as the deluge itself, would wash out animal remains from deposits of anterior date. and mix them with those of man himself. In this case.

if the bones were obtained from older deposits, they would, for the most part, naturally be fragmentary and water-worn. This might be the case, supposing that they only dated from the earlier period of the antediluvian epoch. The floods of that epoch and the deluge itself might drift and roll them, and then redeposit them in their present mixed condition.

The few exceptions to the second point also deserve a remark or two. A few flint implements and bones of animals occur also in the overlying beds. bones are also fragmentary and worn. Such facts we regard as farther evidence in favour of the explanation which we offer. The subsiding waters of the deluge would be very likely to wash out bones from deposits of the antediluvian and, perhaps, of older periods, as well as from the sands and gravels deposited by its own action, and, in smaller numbers to mix them, along with a few flint implements brought down from higher levels, in the finer sediment which would be thrown down by its mud-charged waters. At present, we only indicate the direction in which these various facts point; their fuller consideration we must reserve to the third chapter of this work.

The large and numerous blocks of sandstone found in these deposits agree with the same hypothesis; and that hypothesis is a simpler and more probable explanation of them than are many of those which geologists have felt obliged to summon to their aid.

That the overlying deposits should contain land and

fresh-water shells of existing species, is also a fact which, on our principles, we can well understand, and is a fact which we should most certainly expect to find in the case. We should also expect them to show few or no traces of transport. The subsiding waters of the deluge would be sure quietly to deposit such shells, and, for the most part, perfect, along with the finer materials held in suspension, and obtained in large quantities from the higher and contiguous lands.

We can well understand too, why, in some cases, marine shells should be mixed with the flint implements and the bones of extinct animals. When "all the fountains of the great deep were broken up," if those fountains mean the oceans of the world before the flood, marine shells of existing species would be sure to be carried by the rushing waters from their ocean bed, and be spread over valleys and lands which were comparatively low, and which were near to such oceans. they are found just where we should expect to find them-toward the base of the deposit containing the largest number of bones and flint implements. may possibly be some exceptions. The effects of the deluge, whose waters remained on the earth for a considerable period of time, would be greatly modified by different local conditions, such as physical structure and form, elevation above the sea, and the confluence of valleys, etc.; so that phenomena which, upon the supposition of a uniform effect, would appear utterly inconsistent with each other, may, without paradox or contradiction, be referred to this momentous event. This remark, which is perfectly just, is necessary to shield ourselves against the charge of ascribing to the deluge apparently inconsistent effects. And to invalidate the argument contained in this remark, it must be shown, that, notwithstanding many modifying local circumstances, the deluge would yield one uniform series of results. But this is infinitely unlikely. The effects produced by the scriptural deluge must have been very various, and have presented many anomalous and even apparently contradictory characters.

Nor are we singular in ascribing these French deposits to a sudden and powerful cause. From a personal examination of them on the spot, Henry Duckworth, Esq., F.L.S., and F.G.S., then President of the Liverpool Geological Society, arrived at the same conelusion. From the more superficial deposit he obtained a human skull, probably an antediluvian one. But Mr. Duckworth does not suggest its age. In the concluding part of his paper on the subject, Mr. Duckworth remarked that, in examining these drift beds, both at Amiens and Abbeville, but more especially in the former place, it seemed to him that they must have been deposited very rapidly. There is no evidence whatever, so far as he could judge, of any very slow or gradual formation; and the impression left on his mind was, that they have been produced by some sharp and sudden catastrophe. And such is the conclusion to which a careful examination of all the published facts, and long and earnest thought upon them, have led ourselves.

Nor have any of our British deposits presented any evidence to shake our faith in the correctness of this conclusion. Going over the examples which this country furnishes one by one, we gather from each harmonious results and still more convincing proof.

Mr. Prestwitch gives one such example from Hoxne. This case does not appear to be so comin Suffolk. plete as are the French ones already reviewed, but, on the whole, it presents the same conditions. Thus, at the base of the deposit we have a bed of gravel containing flint implements and fragments of bones. Some of these fossils, as might be expected, are also found in the clay and peat beneath. Then, overlying the gravel, we have, what Sir C. Lyell calls a fresh-water formation of sand, etc., containing fresh-water shells and some flint implements and mammalian bones. overlapping this, a superficial deposit of gravel is spread A very possible case. After the deluge had thrown down a large portion of sand and mud, it might, when subsiding, sweep down large quantities of finer gravel, and spread it over the deposit of sand containing fresh-water shells.

We select another case from Cornwall. In the autobiography of Mary A. Schimmelpenninck, we are told that on the hill-sides between the towns of Truro and Plymouth, in the stream tin works, a pickaxe made of elk's-horn, and flint arrow-heads, and human skeletons,

were found buried beneath several marine and freshwater strata, twenty-four feet beneath the present surface of the ground. As this interesting case was not scientifically examined, we cannot be certain of the relative position of these respective remains. Still we have, in combination, the general facts presented by such examples. The fossiliferous remains are at a considerable depth, and these embrace man's implements and skeletons, and fresh-water and marine shells. Unfortunately, we are not told the relative position of the fresh-water and marine shells, and therefore can infer nothing as to the point of order. We should expect the marine shells to be towards the base of the deposit. But although this point is left obscure, yet the case is highly interesting, as furnishing a somewhat decisive example of the remains of man himself in connection with his implements, and with the fresh-water and marine shells which would be entombed with him when overwhelmed by the flood.

Similar remains of man and of extinct and recent animals have been reported from the valley of the Ouse, near Bedford, from different parts of the valley of the Thames at Brentford and Kew Bridge, in London itself, and on both sides of the Thames below it, as at Ilford and Gray's Thurrock, from Guildford, from Kent, and many other parts of England; from the Oise in France, from near the city of Rome, and from different parts of the continent. It is clear, therefore, that they are very general, and must have had a very general cause.

THE EVIDENCE FOR MAN'S ANTIQUITY SUPPLIED BY CAVE AND FISSURE DEPOSITS.

This branch of the inquiry is more complicated and more difficult than the preceding. The examples recorded are more numerous, and the opinions held respecting them are more diversified.

The caves and fissures containing the remains of man, and of extinct and recent animals, are found in limestone formations, and, doubtless, owe their existence to the rending and upheaval of the solid rock, and to the dissolving power of water holding various acids in solution. Some of these caves and fissures are nonfossiliferous. Examples of the latter kind occur in the escarpment of the limestone bordering on the northern outcrop of the South Wales coal basin. These contain nothing but fallen pieces of the limestone, and a sort of red earth or clay, evidently produced by the gradual decomposition of the rock. Others again, like Thor's Cavern, near Wetton, in addition to a similar deposit of fragments of rock and red earth, furnish ornaments and implements of a comparatively recent period. In other cases, only animal remains have been found in the deposits. But our present concern is with the caves and fissures, which, along with those of extinct animals, furnish remains of man himself.

But before we proceed to examine some of these in detail, we must again offer a few preliminary observa-

One of these is founded on the fact, not only admitted but asserted by one of the most eminent of our geologists, that all the mammalian remains found in the British caves are of more recent date than the boulder clay. This boulder clay is a thick and often unstratified deposit, supposed to have been thrown down during what is known as the glacial period, when the countries of Europe and America were subject to intense cold, and when the present dry lands were covered with glaciers of enormous thickness and extent, or submerged beneath an ocean of arctic temperature, and covered with floating ice. Was this period the close of the tertiary land fauna? Did most or all of the terrestrial animals of the tertiary epoch then cease, leaving a long, dreary, dismal lapse of time, during which the earth became "without form and void," and formed the dark and desolate scene which was reduced to light and order some nine or ten thousand years ago, and repeopled with man and with the land animals proved to be cotemporary with him? While looking at the fact, and at all the kindred facts which it involves, this, we confess, is the sublimely interesting thought that has strongly obtruded itself on our notice; nor is there anything in the thought in the least degree improbable. It would, at any rate, hold good with regard to all the countries where glacial phenomena have been found. Of course it would bring the boulder clay lower down the stream of past time than is generally supposed. And why not? What real objection can there be to

such a conclusion? The beginning of the glacial period may still date back to some hundreds of thousands of years, and perhaps of ages. And supposing the fact stated-that all the mammalian remains found in our cave deposits are of more recent date than the boulder formation—should indicate the destruction of the latest tertiary land fauna, we should then have, previous to the present and human period, such a state of things as the language of the Bible implies, and we should have a wonderful degree of definiteness and precision in the language of Sacred Scripture respecting the creation at the period referred to, of all things that inhabited the new-formed earth. We accept the fact on the authority of the eminent man who stated it, and believe that such is the direction in which this fact looks. Such a conclusion would also remarkably agree with our entire theory respecting all the deposits which overlay the boulder clay.

Another remark which we have to make is this: that all the cave deposits in which the remains of man have been found, appear to be of the same age. The flint or stone implements found are similar in form, and appear to have been made for the same purposes. Thus, in most of the caves we have arrow and spear-heads, and hatchets and hammers and other kindred implements, on the whole identical in shape and manufacture. Then, as these implements also exactly resemble those obtained from our valley gravels, we are further warranted in concluding that they belong to one and

the same epoch, and have, subject to modifying local circumstances, all been deposited by the same general They do not therefore cover a very long period of time. From the date that these lands might become peopled by antediluvian man, to the close of the flood, and including it, there would be ample space for the accumulation of the materials in which the remains of man and of the cotemporary animals are found. That period, on a moderate calculation, might embrace from twenty to twenty-five centuries—a period long enough surely to allow for men to remain in the low state of civilization and mechanical art indicated by these implements. Some of these implements might be left in the caves by man himself; others might be carried in by the floods which probably occurred during the antediluvian period; and others, together with the remains of animals, and of man himself, might be carried in by the swelling waters of the Noaic deluge itself,—and thus, in some cases, they would be found in different beds, and on a succession of levels.

Another observation which we have to make is, that none of the theories offered in explanation of these cave deposits are applicable to every case. And, even in each individual case, grave exception can be taken to the explanations offered. Hence the variety of opinion, and of conflicting opinion, prevailing respecting them. Scarcely two explorers are entirely agreed. Then, in most cases, the authors of various theories are obliged to summon to their aid alterations of level, depressions

and elevations, unusual floods in limited districts, severer cold, the sudden melting of large accumulations of ice and snow, and various other agencies, in order to enable them to solve the congregated phenomena present in many of our cave deposits. Hence, we cannot but feel that it is unspeakably more rational and philosophical to accept the biblical deluge, which, modified in its action by many widely differing local conditions and circumstances, would be sufficient to produce all the effects which these manifold agencies are summoned to produce. Water, and something like torrential floods, are a conspicuous element in most or all of the solutions offered by those who are competent to offer a solution at all. Why, then, not accept the water and torrential floods of the deluge? Can it be that this solution is rejected because the authors of theories like to divert themselves, and to startle believers in the Bible with their dreams of appallingly long periods of time for man upon the earth? From the enormous antiquity that looms so fearfully before them, they profess to recoil,—to be almost afraid even to indicate it, -and yet they would have us to attempt to leap the dark wide gulf, across which they themselves are afraid to look, and to give up the solid ground of our Bibles for the unfathomed depths of human speculation! course, if the deluge is accepted, the long period claimed must be greatly reduced, and a duration proportioned to the real chronology of the Bible be embraced.

We venture on a fourth observation respecting these

deposits. We mean the paucity of man's own remains as compared with the number of flint implements and of the remains of animals that are found in them. This remark gives rise to a somewhat complicated question. The fact itself appears to be indisputable. corded instance are the bones of man at all so numerous as are his implements and the bones of animals. If man has been on the earth hundreds of thousands of vears, why have we found so few of his own remains? The two facts do not harmonize. How then is this paucity to be accounted for? Is it that the remains of man are more perishable than are those of the lower animals? We are not at all aware that such is the Then the remains which have been found forbid the supposition that the dead were consumed on the funeral pile. But if man has been upon the earth as long as the theories on the subject suppose, we do not see any other way of accounting for the fact. On the contrary, if our biblical deductions are accepted, solutions much more feasible are at hand. The countries distant from the central point of dispersion would be likely to be thinly populated by man; and then, as the antediluvians lived to great ages, we should expect that man's implements would be out of all proportion to his Then another of our biblical deown scanty remains. ductions solves the other part of the difficulty. The language of Scripture led us to conclude, that, unlike that of the human race, the creation of animals was not limited to one original pair; but that every part of the

earth was made to bring forth plants and animals simultaneously. Thus, from the very first day of the Adamic creation, all the inhabitable parts of the earth would receive the animals destined to people them. It might be by the same or by allied species, varied according to the climate and zone they were to enjoy. These are questions most interesting and tempting in themselves, but they do not belong to our present purpose. The point on which we insist is this: that our biblical deductions enable us to account for the fact, that, in our cave deposits, the bones of animals exceed in number those of man.

Then as to the men destroyed by the flood itself. Some of them would probably be overwhelmed at once, others would be overtaken and destroyed in their cave refuges, while the bodies of others, which would float for a long time, might either be left upon the dried surface of the new world, where, in a few years, they would crumble away,—or they might, by the subsiding waters of the deluge, be carried out to sea, and be deposited upon the bed of the ocean. Is not the ocean-bed the solemn burial-place of many of our antediluvian forefathers? Be this as it may, the paucity of man's remains in our cave deposits admits, on our principles, of a more rational solution than on any other; and, until a better is supplied to us, we shall believe it to be the true one.

May we venture a fifth observation: That, with few and easily accounted for exceptions, all our cave deposits furnish proof of a large break in the human period. We cannot read any of the accounts given of them. without feeling that they belong to the past. period at which these old fossiliferous deposits closed. is one of distant date. What brought them to a close, and, judging from the deposits themselves, an apparently abrupt close? For a considerable time, at least, and except, perhaps, in very small numbers, no animals appear to have occupied the regions after the close of this preeminently fossiliferous era. How, on any other hypothesis than our own, are these palpable facts to be accounted for? If these cave deposits were brought to a close by the deluge, which destroyed the animals as well as man, then the above fact is at once explained. a long period would elapse before the regions thus suddenly and, perhaps, entirely depopulated, could be repeopled, either with animals or man,—and before thus repeopled, such regions might be considerably changed in physical character, and thus make it exceedingly difficult to account for the circumstances under which these old remains are found.

The force and propriety of these remarks will be more specially seen when applied to the caves themselves. Not that we can examine them all. We shall therefore again select a few typical examples.

As one such example we take the Wookey-hole Cavern, near Wells, minutely and accurately examined by W. Boyd Dawkins, Esq., and others.

This cavern embraces an antrum, or entrance-hall,

and several passages. Some of these passages are horizontal, and some vertical,—the latter being destitute of fossils, and evidently filled up since the deposition of the bones. From the fossiliferous passages, some one thousand bones and teeth of animals were obtained,—including those of hyæna, bear, felis, dog, elephant, rhinoceros, ox, stag, or deer. "A glance at the tables," says Mr. Dawkins, "in which all these remains are minutely catalogued, will show that, on the whole, the remains of any given animal, if abundant, are not confined to one spot in the cave, but are pretty evenly distributed, and lie large with small; the more with the less dense; not in the least degree sorted by water. There is no evidence of the bear succeeding to the hyæna, or the felis to the bear, in the occupation of the cave; or that the latter retired thither to die. as in some of the caves of Germany; or that any of the herbivorous fell into the open swallow-holes, as in the Hutton and Plymouth caves. On the contrary, the numerous jaws and teeth of the hyæna, the marks of whose teeth upon all the bones and jaws, &c., show that they alone introduced the remains which were found in such abundance."

But how does Mr. Dawkins reconcile this last assertion with the following admission: "A glance, however, at the vertical section will show, that some of the remains are not now in the exact position they occupied in the days of the hyæna. The maximum distance of the bone layers from the roof is but eight inches, a space

manifestly too small to allow of the hyænas devouring their prey; while, in many instances, the remains actually touched the roof. This, indeed, has been used as an argument in favour of their having been introduced by water, from some unknown repository."

And why not, in part at least, have been introduced by water? What is there in the case that is opposed to this supposition? "On this supposition," Mr. Dawkins urges that "the introducing current of water must either have passed down the vertical passages or through the horizontal mouth of the antrum." This inference does not follow, unless the current of water was precisely of the character described by our author. could not water come in some other form? a rising deluge pour its waters into the cave in both directions simultaneously, and thus prevent or neutralise the supposed effects in question? Water thus introduced would not sweep out the bone-bed in the narrow passages into the antrum, nor leave in the antrum the great bulk of the remains; but would be most likely to carry them into the narrow passages, where they are now actually found. But the possibility of such a deluge never seems to have been thought of by our author.

"But, apart from this evidence," which on our supposition is no evidence at all, "the absence of marks of watery action upon the organic remains, and especially of that sorting action, which water, as a conveying agent, always manifests, and in no case more remarkably than in the lower jaw of the Stonesfield mammals, makes the hypothesis of their introduction by water untenable." How so? And is not this assertion in direct opposition to the admission which Mr. Dawkins makes at the close of the next paragraph of his paper?

From his own account we should infer that the bulk of the fossil remains were probably introduced by the hyænas during the antediluvian period, assisted perhaps by occasional floods, and at length the cave was all but entirely filled up, by the deluge carrying in additional materials, both through the horizontal and vertical passages, and by these, mixed with some of the contents already in the cave, in some instances lifting the remains up to the roof itself.

By this explanation, which has been suggested to us by the author's own words, the facts, which he admits are so conflicting, would be easily reconciled. We find, indeed, some difficulty in making the various statements of our author consistent with each other. He says, for example, "that the condition and distribution of the organic remains all prove that they were not introduced by water. On the other hand, the horizontality of the layers, the presence of layers of peroxide of manganese, of the red sediment and of the sand, show that water certainly was an agent in rearranging and introducing some of the contents of the cave." How the author can reconcile these statements, we do not know; but the biblical deluge already described, would account for all the apparently contradictory facts which so puzzle

him, and for which his only solution is the occurrence of floods during, and perhaps after, the hyænan period of occupation. Such floods would not produce the effects which our author supposes for them, unless their waters had risen all around the cave simultaneously. They would rather have produced the effects, the actual absence of which leads him to deny the introduction of the animal remains by the action of water. Besides, where is the evidence of such floods? The example which he gives is not to the point, unless it could be shown that the conditions of the two cases are identical. Then whence could such floods come? Where is the large area of drainage, which, on natural principles, could supply the amount of water requisite for the purpose? What causes must be summoned into existence and operation to yield these floods? But where is the evidence of the operation of such causes? The response is,-no answer.

But admit that the hyænas, etc., etc., inhabited the cave during a large portion of the antediluvian period, or for as long a time as was necessary to deposit the remains found in the cave, and that the whole was consummated by the biblical deluge, introducing its rising waters through the passages, together with abundance of sediment, and in part rearranging the contents of the cave, and mixing them, and lifting the topmost layers up to the roof itself,—and we have as full and as consistent an explanation of all the varied and complicated facts, which Mr. Dawkins gives with so much admirable

and praiseworthy precision and skill, as we could expect to have of phenomena dating at the least from six to eight thousand years ago. We have endeavoured to give Mr. Dawkins' own view with all fairness, and we now appeal to the candid reader to decide for himself which solution is the more probable. We dispute none of his facts, and we leave for others to determine whose explanation the best accounts for and reconciles all these facts.

Still we are bound to hear him state the "results of the excavations" of this remarkable cave. To his account of the ancient physical geography of the district, we have no need to take any exception. It may be true or not true. We leave this point for others to decide. But if there was no river in the immediate vicinity of the cave, we ask, how, notwithstanding the large area supposed to exist, does Mr. Dawkins obtain his floods? Such floods generally follow river courses. Unless he indeed admit some such flood as the biblical deluge,—then of course we agree with him. Nor do we take any exception to his account of the subsequent depression and elevation of the district; but believe that if such changes have occurred, they belong to the postdiluvian period.

And from their position near the mouth of the cave, we should be disposed to regard the few human remains obtained as belonging to the same postdiluvian period. We do not however urge this point.

But on the other hand, we cannot admit that the less

perfectly constructed flint and other implements are any proof "that their authors were of a lower order, and of greater antiquity, than the authors of the similar vet, it may be, more highly finished implements of Abbeville and Amiens." It would be quite as just to conclude that a less skilled artisan was of a lower order and of more ancient date than his more clever fellowworkman! These gratuitous assumptions are unworthy of science, and ought to be discarded from its works. If the inhabitants of Sheffield were less skilled in the manufacture of a given implement than were those of Birmingham, would it be logical, would it be philosophical, to conclude that the former were of a lower order, and of greater antiquity, than the latter? Yet such is the logic employed in reference to the flint implements found in our caves. We again beg to remind the advocates of man's great antiquity, that rude implements and imperfect workmanship are proofs, not of age or of lower grade in the scale of physical organization, but only of mechanical skill and of national development.

We may now hear our author's conclusion. "The whole body of evidence tends to prove that man, in some of the earlier stages of his being, dwelt in this cave, manufactured his implements in it, and was, beyond doubt, cotemporary with the extinct fauna of the cave." The evidence, we think, scarcely warrants this positive conclusion. But we let it pass. We are not aware that this cave contains any animal remains

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that would form an exception to the decision of the late Dr. Falconer, whose loss to science we deeply regret, that all the mammalian remains found in the caves of Great Britain, are more recent than the boulder clay. We regard these animal remains, and those of man, therefore, as belonging to the antediluvian epoch: and. perhaps, the last generations of them were destroyed by the waters of the biblical deluge. It was then, probably, that in the regions where these remains are now found, some of them became extinct. "The flood came, and took them all away." This supposition agrees in a remarkable manner with Mr. Dawkins' further statements. "Then, after an interval in which much of the fauna became extinct, and in which the whole of the district was considerably depressed, we again meet with the traces of man in the coarse pottery and human teeth found by Dr. Buckland in the Wookey-hole Cavern." But what is there to show that the animals and antediluvian man did not become extinct at the beginning of this interval? And, if so, what could more fully realize our biblical deductions? This "interval" was the period that would elapse between the destruction of man, and of his cotemporary animals, by the flood, and the repeopling of the regions thus depopulated, by man and animals after the flood. That period may have embraced many centuries: the precise number of years is not at all material to our conclusion. It is enough that this case presents the break, the "interval," which our biblical deductions demand.

Then the filling up of the cave, the absence of wateraction on the bones, yet their rearrangement by water notwithstanding, and all the other varied facts stated, are all consistent with our explanations of them; and as that explanation is as rational and philosophical as are all opposing ones, and as, in addition, it possesses the great advantage of fully according with the teaching of Holy Scripture, we shall, until a better one is furnished, believe it to be the true one.

The only apparent lack of completeness in the evidence supplied by this case can be more easily accounted for on the theory which we suggest, than it can on any other. We allude to the seeming absence of human bones in the cave. Perhaps man merely used the mouth of the cave as the place of manufacture. Its interior might be mostly filled up before he, in small and feeble numbers, began to inhabit the district; and therefore he could not make it his abode, nor, when the flood came, take refuge in it from the judicial torrents descending upon him from the opened windows of hea-Our biblical deductions lead us to conclude that, with the exception of the more central region first inhabited by the human race, all parts of the earth would be peopled by the brute creatures before they were peopled by man; and thus, that their remains would be likely to be much more abundant than his own.

And to some extent, this might be the case after the flood, and especially if the animals belonging to the

different regions of the earth, preserved in the ark, or by other means, were, after the subsiding of its waters, restored to their original habitats: and this supposition appears to be necessary to complete the miracle of the deluge. As to difficulties in such a case, we have already shown that the attempt to solve such difficulties by natural causes, is altogether a wrong mode of procedure. If natural principles could be made to account for them, the miracle would vanish. Leave the natural and the miraculous in their own province, and account for them by the principles peculiar to each. On the Divine authority of the Sacred Scriptures, we believe in the miraculous character of the deluge; and therefore believe that man's angry Judge, directly and by supernatural means, performed all that was necessary for the completeness of the miracle. Hence, after the deluge, the brute creatures destined to accompany man into the new world, would people the regions of the earth more or less distant from the resting-place of the ark a considerable time before man himself would; and if, in fulfilling his commission to "subdue the earth," man destroyed any of the brute species, he might, after the flood, be for a while cotemporary with animals that have been extinct for four or five thousand years.

THE BRIXHAM CAVE.

This cave presents a most interesting and decisive example. Being a "virgin cave," and having been most carefully explored, and every discovery systematically registered, it leaves nothing to desire in regard to the data which it supplies for testing the various theories held respecting such deposits. The entrance to this cavern was completely closed up with fragments of the adjacent limestone, firmly cemented together with stalagmitic matter into a breccia. After an entrance was forced, Mr. Pengelly found the antlers of a reindeer lying on the stalagmitic floor. These must have been introduced after the floor was formed; and therefore long subsequently to the introduction of the remains forming the bone bed. And yet these antlers themselves must be ancient, inasmuch as that they must have been shed or introduced into the cave before its entrance was closed up by the stalagmitic breccia. Now, if the deluge be admitted, the explanation is obvious. Man, whose implements are found toward the base of the bone bed, may have inhabited or frequented the cave during the antediluvian period; and his implements may have formed the base of the bed containing the remains of animals, and rolled and worn nodules of hæmatite iron ore, and have become partially mixed with these and other materials which would be carried into the cave by the waters of the deluge.

For it does not appear that the animals, whose remains are found in the cave, ever inhabited it. Their remains, whether more or less perfect, are so mixed with the remains of man, and with rolled materials, that it is clear they have been introduced by the action of water. Nor does the interesting fact that the entire

left leg of a bear was found in the deposit at all militate against this conclusion. The wonder is not that the flood should carry into such caves the entire limbs of animals, but that such cases are not more frequent; and that they do not embrace larger portions, and even entire skeletons of animals. The reason may have been that the opening of the cave did not admit of their entrance; or, as we suspect, this cave may have been filled up toward the close of the deluge, when the bodies of the animals destroyed by it would be more or less decayed, and the bones for the most part stripped of the flesh, which would account for their comparatively perfect state, notwithstanding in the cave itself they are mixed with rolled and worn materials.

Then this explanation would solve the difficulties mentioned by Mr. Pengelly, and for which he can only account by supposing that either the valley did not exist when the materials were introduced into the cave, or that it was filled up with gravel which has since been cleared out. Even supposing that there were none of the rolled hæmatite iron nodules on the side of the hill where the cavern is situated before the flood (which is not proved, nor can be), the waters of the deluge, if moving in that direction, might carry them across the valley, and up the other side, as far as the position of the cave.

But this supposition is not necessary. If, as from other evidence would seem to have been the case, the cave was filled up towards the close of the flood, or when its waters were subsiding, the valley might be in a great measure filled up with the debris which the flood itself would produce, and thus allow the rolled nodules of hæmatite iron ore to be carried across it without any difficulty. Then, as the waters of the deluge still farther subsided, they might clear out again most of the loose materials by which the valley had been filled up. To assume, as Mr. Pengelly does, that the valley has, subsequently to the filling of the cave, been reduced to its present physical configuration by natural causes, is to beg the whole question. Those causes, operating, as they have done, for some six thousand years at least, must have produced considerable effect in the way of deepening the valley, and in modifying the physical configuration of the locality; but to assume that no other cause has operated in the case, is an assumption entirely gratuitous. It cannot be denied, that when they "returned from off the earth," and as soon as their force could be brought to bear on the loose materials swept into the valleys by the torrential rains, the waters of the flood would be exceedingly likely to scoop out such valleys again to considerable depths.

In fact, we can see no phenomena in this Brixham cave that do not admit of clear solution upon the supposition of a deluge, without any greater antiquity for man being necessary than that warranted by our biblical deductions. Without any hesitation, we admit that in part, at any rate, man was cotemporary with

the animals whose remains are found with his own; but we can see no reason whatever for assigning to these remains any greater antiquity than that of the antediluvian period, and the time of its consummation by the biblical deluge. And as the Bible asserts that a deluge occurred at the close of that period, and as such a deluge will account for all the phenomena which this important example presents, we prefer to receive its positive and Divinely authenticated testimony, rather than accept theories which, on utterly insufficient grounds, would bring us into collision with its statements.

We have in this case, too, the requisite proof of pause or break in the series. Thus the remains of man and of animals introduced during and at the close of the antediluvian period, are covered up by, and the upper portion of them partially mixed with, the stalagmite That formation furnishes a marked epoch of time, and indicates the period that elapsed between the close of the deluge and the repeopling of the region by the reindeer, whose antlers were found on the stalagmite floor, and doubtless by other animals, and man. These remains of the reindeer must have been introduced into the cave long after the other animal remains, and when sufficient time had elapsed to form the stalagmitic covering spread over them; and yet they must be ancient, for they were evidently introduced before the entrance was closed up by the breccia. Hence, this case, too, fully realizes the principles of our

biblical deductions, nor does it present anything that appears inconsistent with those deductions.

Great Britain, also, contains many other caverns, presenting most tempting material for review and discussion: but our limits forbid us to indulge the wish we feel to consider each and all of them in detail. There are the Gower caverns with their implements and solitary human skeleton, admitted to be recent; the Kirkdale cave, so admirably described by Dr. Buckland; the Oreston caves or fissures near Plymouth; Kent's Cavern, near Torquay; and the cave or fissure in Weardale; these, and other British caves, are full of the utmost interest, and deserve a careful examination. But our space and purpose forbid. If any of the caves presented anything inconsistent with our previous conclusion, we should feel bound to examine them. But they do not. They all verify the remarks of Humboldt; and, therefore, the examples already considered may be honestly regarded as covering all the phenomena which our cave deposits embrace.

THE BELGIAN CAVES.

The caves of Belgium are extensive, but they present nothing inconsistent with the conclusion to which other cave deposits have led us. Whether we take, as the standard of age, the materials forming the principal contents of the caves, or the animal and human remains found in them, there is nothing in either that materially differs from those of the caves we have already ex-



amined. From their rolled condition it is clear that they have been introduced by the action of water. On no other supposition can they be explained. There seems decisive evidence, too, that some of the fossil contents have been washed out of previous deposits. But still, these may, or may not, be older than man; for their deposition may have occurred during the long antediluvian period. Then, in the case of these Belgian caves, the fossil remains, for the most part, seem to be fragmentary; a proof that the animals to which they belonged were not destroyed in the cave, and that they did not die there, but that the remains were carried in by the action of water.

But whence could the amount of water requisite for this purpose be obtained? Large floods of some kind, as well as changes of level, are summoned by the advocates of man's great antiquity, to assist them in the solution of the phenomenon. Why not the biblical flood? It is replied, That this would have filled up the caves more rapidly than they appear to have been filled up. But where is the proof that they were not filled up rapidly? The materials might be introduced during the whole of the time that intervened between the commencement and close of the deluge. Or some of them might be introduced long before the deluge, and simply be rearranged by it. The flood might only complete the deposit, and finish the filling up of the cave.

Amid the conflicting opinions held respecting the

human and animal remains found in these caves, it seems a little difficult to come to any positive conclusion concerning them. After looking carefully at the published facts, we do not see any reason to object to the supposition that the animals, whose remains are found in these caves along with the bones and implements of man, were in part, at least, cotemporary with him. Though only introduced on the earth at the same time as man, yet, in the regions in question, they may have long preceded him, and some of them become extinct before him, while others may have perished at the flood. The probability is, that with the exception of a few animal remains that may have been washed out of deposits of anterior date, the whole fauna belongs to the human epoch. The human remains point to the same conclusion. Then these remains prove the truth of one of our principles, that the form of the skull, or its degree of cranial development, is no evidence of antiquity or otherwise. Thus, in the case of the Engis cave, one of the caverns of the Liége, rude implements, as well as the remains of extinct animals, were found in connection with human skulls, one of which is said to exhibit the high Caucasian type. Yet the great antiquity of this skull is undoubted, and unquestionably belongs to the same period with the other fauna of the cave. On the contrary, the human skull found in the Neanderthal cave, the great antiquity of which is very doubtful, is said to be the most brutal one ever vet discovered; a conclusive proof that the

size and structure of the skull are no evidence of age. We do not see anything peculiar in these Belgian caves rendering it needful for us to give to them the minute and lengthened consideration which we gave to the Wookey-hole cavern. We have the same water-action, the same conflicting phenomena, the same pause after the fossil remains were deposited, as may be seen from the statements of Sir C. Lyell, and the same general conditions. We conclude, therefore, that they belong to the same period as do the fossil remains of our British caves.

THE LANGUEDOC CAVES IN THE VALLEY OF MASSAT, IN THE DEPARTMENT OF THE ARIEGE.

In regard to these caves, we could not select language more in accordance with our previous conclusions than that used by M. Alfred Fontan, their explorer, uses in reference to them. After describing them, and assigning reasons why rain-water could not have introduced nor arranged the deposits of the caves, nor floods from the Pyrenees, he attributes them to one or more extensive deluges. He says, "The fact of a flood produced by torrents capable of filling up this valley, is not a simple accidental occurrence to be explained by causes purely local. If it existed, similar effects must have been produced in all the neighbouring regions, and must even have extended to a distance. It would have been a true deluge, destroying everything in its passage; and, as history is silent (?) on the subject, we cannot

believe it to have been of recent occurrence." No: it must have been some six or seven thousand years ago. And respecting that deluge, tradition is not silent, if profane history is. Then the sacred history expressly asserts that such a deluge occurred. But we will quote our author's conclusion. "In conclusion, we deduce from these facts,-first, that a diluvial current penetrated into the valley of the Massat, coming from the N.N.W., or W., toward the S.S.E." Why not from all these points? The scriptural deluge would "Secondly, that this current did not continue for a long time." The coincidence of this with the biblical deluge needs no pointing out. "Thirdly, that man, and all the other animals, the remains of which are buried in these caves, existed in the valleys before this cataclysm." This is identical with our own deductions respecting these points. "Fourthly, that the greater part of these animals inhabited the caves; from whence we must suppose than man was not contemporary with all of them." Not of all of them as individuals; but why not as species?

The subsequent remarks of the author may be true; but we confess we cannot harmonize them with the facts which he previously states. If the bones of carnivora, ruminantia, and rodenta were all mixed together, rubbed and broken, giving evidence of distant transport, or at least of violent displacement, whence does he infer that these animals inhabited the caves at all, and that they did not inhabit the valley at the same

time, and that man inhabited the valley and cave the last? The facts as stated, and the conclusions sought to be drawn from these facts are antagonistic to each other. We, however, can easily understand the reason of this apparent discrepancy. The simple truth is, like the Wookey-hole Cavern, the facts presented are conflicting. Admit that during the antediluvian period, the cave was successively occupied by lions, hyænas, and bears, and somewhat later by man,—and that the deluge introduced other materials, including rolled pebbles, and bones of animals, and perhaps implements and bones of man himself, and partially mixed these introduced remains with those previously in the caves,-and we should then have all the apparently conflicting phenomena which appears to have led M. Fontan to conclusions inconsistent with his own statement of the facts of the case. Inconsistent on any other hypothesis, these apparently conflicting facts, are all easily harmonized on that of the biblical deluge; and form, we believe, a conclusive proof that such a deluge has occurred, since man and the existing species of animals occupied these European lands.

THE BONE CAVES IN THE NEIGHBOURHOOD OF MONTPELLIER.

These caves present the same phenomena as the preceding. The deposits beneath the usual stalagmite covering contain the bones of extinct and of living

species of animals indiscriminately mixed together. In fact, the same general phenomena is found in all the bone caves of the world. The remains of animals and of man are accompanied by alluvial and diluvial deposits. And as Humboldt most wisely and conclusively remarks,—"When a phenomenon is general, and repeated under the same conditions, as has been the case in the filling up of the longitudinal and vertical fissures of calcareous rocks, such a phenomenon must have been produced by a cause as general as the effects which group around it. According to this double condition, which is presented in all caves where remains of animals of geological date are found, it is impossible to attribute it to any other cause than to violent inundations."

And why not to the one biblical inundation, which in duration and extent, and in vast result, would equal many inundations of a more brief and limited character? Indeed, with such evidence in its favour, who can any longer rationally doubt the occurrence of the Mosaic deluge in the countries of Europe? Could we, under any circumstances, expect to find stronger or clearer proof of this fact? Then this proof is in entire harmony with that furnished by the deposits of our river valleys. As their fossil contents clearly show, both deposits belong to the same period, and were doubtless produced by the same general cause.

CAVES AND FISSURES OF THE ROCK OF GIBRALTAR.

The caves and fissures found in the rock of Gibraltar are most interesting, and form the scene of some of the most recent explorations and discoveries. As yet these caves have only yielded three species of animals supposed to be extinct. We regret that we are not told where these remains, doubtfully referred to extinct species, They are Rhinosceros etruscus, R. were found. leptorhinus, and Sus priscus. By the authors of the paper on the subject it is concluded "that torrents of water swept the bones, with mud, shells, and other surface materials, into the fissures that intercepted their course; then the extraneous objects were arrested by the irregularities in the passage, and subsequently solidified into a conglomerate mass by long-continued calcareous infiltration."

The "Genista" cave of Windmill-hill is a fissure which Capt. Browne has excavated or traced down to a depth of 200 feet. It was full of the fossil remains of quadrupeds and birds, and the upper chambers contained the remains of man. These seem to have belonged to from thirty to forty individuals, to be of different epochs, but perhaps none of them of great antiquity, *i.e.* before the historical period. With these remains of man were found polished stone implements, broken querns, a large quantity of pottery, and marine shells of edible species, etc. The fauna, on the whole, is an African one, indicating, at a remote period, a connection between that continent and the rock of Gibraltar."

Such appear to be the principal facts of the case. From them we may infer, first, that these fissures in the calcareous rock of Gibraltar are of ancient date. And, as when first produced, they probably reached to the surface of the country, animals of very ancient date may have had their remains introduced into them. Or the animals may all belong to the antediluvian period, and their remains may have been swept into the fissures by the waters of the deluge. The facts of the case agree with this supposition. Torrents of water are the agents to which the introduction of these fossil remains into the fissure is attributed. But whence such torrents of water on the rock of Gibraltar? Submergence to the extent required will hardly be contended for. But to obtain torrential floods in any other way, great changes in the physical configuration of the region must be supposed. But is there any evidence of Then small torrents, such as might be collected in a limited area, could hardly be expected during the existence of the same species of animals, to fill up with similar remains a fissure some 200 feet in depth! All the facts rather indicate a much more sudden filling up. Such a filling up, in fact, as would result from the varied and somewhat prolonged action of the biblical deluge. We do not, of course, suppose that the whole filling up is due to that event. On the contrary, it may have gone on according to the slow operation of natural causes, during the whole antediluvian epoch, and may only have been consummated by the deluge

sweeping from the surface whatever was found upon it, into the already partially filled fissure.

Or should the human remains and pottery, found only in the upper chambers, turn out to be of more recent date, then the materials swept into the fissures by the deluge may be supposed to terminate with the remains found in the chambers beneath. Before these points can be determined, we should need more minute information on the matter. Nor does our conclusion hinge on either alternative. In either case, there is evidence enough to show that the bulk of the materials were introduced into the fissures by the action of torrents; and from the large amount of the materials thus introduced, and from their close resemblance to each other, there is a strong probability that they were introduced by some such mighty and sudden torrent as that furnished by the biblical deluge.

Could we venture, as many of the flint and stone implements would seem to warrant us to do, to regard the human remains as belonging to the same general epoch, as the bulk of the animal remains obviously do; then our biblical deductions would be still more strikingly realized. We should then have clear proof that the animals preceded man in the possession of this region; and that some of their remains were introduced into the fissure long before man's arrival upon the scene. Then, if it be true, as our authors assert, that the human remains belong to different ages, some of them may have been introduced at different periods of the antediluvian

epoch, and the more recent ones by the flood itself. Or should the querns and pottery prove a comparatively recent date, then the human remains may be regarded as the result of interment.

On these somewhat doubtful points we offer no positive conclusion. So far as the present evidence goes, we are, on the whole, inclined to regard the human remains as belonging to the same general epoch as the animal remains do, but to the latter part of that period. The polished flint implements are no disproof of this. And why should not antediluvian man possess sufficient skill to manufacture pottery?

These ancient inhabitants of the celebrated rock in whose fissures their remains are found, may have left the central point of dispersion later in the antediluvian period, and may have continued more intimately connected with it than were the antediluvians of the countries whose productions are of a ruder kind, and may thus have more largely shared in the civilization and knowledge which the inhabitants of that central region undoubtedly possessed. Noah and his assistant artisans would not be the only persons skilled in the use of tools.

We confess, indeed, that this Gibraltar cave most deeply interests us. We do not know of any cave that is more worthy of most minute and careful examination. The abundance of animal remains, and their evident connection with an African fauna; the unusual number of the remains of man, and the querns and

pottery found with them,—all give rise to a long series of questions, which, for their full solution, would demand a most minute and skilful examination and registry of the facts. The animal remains would seem clearly to prove that, during the antediluvian period, Gibraltar was connected with Africa. Have any animal remains of the same species as those Gibraltar ones been found in fissures or gravels on the African side of the strait? And have any human remains, resembling those found in the fissures of the Gibraltar rock, been also discovered in North Africa? Or do these human remains show any intimate connection with present African races?

Several of the species of animals, whose remains have been obtained from the fissures at Gibraltar, are still existing in Africa. One of them, the hyæna brunnea, is found in Southern Africa. Did this division of the rock of Gibraltar from Africa take place at the time of the scriptural Peleg, some four or five hundred years after the flood, in whose days the earth is said to have been divided? These and kindred questions suggested by the phenomena before us, are of the deepest interest; but before we can solve them, we must wait for more abundant and carefully collected data.

THE MALTA CAVES.

On these it is not necessary to dwell at any great length. It is admitted that the remains which they contain were introduced by the action of water. They

thus present nothing that is inconsistent with our previous conclusions; and we feel compelled to conclude, that the solution which so fully accounts for the complicated phenomena presented by our cave deposits. is and must be the true one. And if so, then we are not at all surprised, that most, at least, of the human remains found in our cave and valley gravel deposits, should seem to differ considerably from the races of mankind who have inhabited the same regions, where the remains are found, since the historic period. They may have belonged to wholly different branches of the same human family. Then, as we have previously shown, a long time would elapse before the more distant regions depopulated by the flood would be repeopled by animals and by man; and, without giving the least countenance to any theory of "transmutation of species," it must be allowed that there was time for external conditions and circumstances to exert a considerable amount of modifying influence both in regard to man and also to animals. The facts are thus in harmony with our biblical deductions, and furnish a strong probability that those deductions are founded in truth.

REMAINS OF MAN IN THE BEDS AND AT THE MOUTHS OF RIVERS.

On these deeply interesting examples, lengthened remark is unnecessary. They may belong to any part of the period that elapsed between the flood and the commencement of the historical era; or some of .

the oldest of them may belong to the antediluvian epoch. In the case of the human skeleton found in an old channel of the Trent, near Newark, and those found in the bed of the Thames, there is nothing to prove any great antiquity. For anything that appears to the contrary, they may belong to a period long subsequent to the flood. The same may be said of the human skeleton found by Mr. Austin, near Duncannon, Ireland. From human remains which we have seen projecting from sands far above high-water mark on the Cornish coasts, we regard all such examples as very doubtful, and as giving but slender support to any theory. They may, and they may not, be ancient. Even when flint implements are found with them, the evidence is still only doubtful; for as our barrows and ancient burial places and altars show, similar implements were in use after the flood, and during the present human epoch. Not that we see any objection against the claim to great antiquity, providing that the evidence in the respective cases were at all sufficient to warrant it. In fact, if proved, it would all be in our favour, furnishing additional evidence of a deluge, and of man's destruction by that deluge.

ANCIENT CANOES FOUND ON RAISED BEACHES AND NEAR THE MOUTHS, ETC., OF RIVERS.

These seem to stand in the same doubtful category as do the remains of man just considered. We could wish it possible to prove them ancient. They would

thus link the authors of them with the canoe-building nations of the present epoch, and would throw considerable light upon the knowledge and arts of the men who lived before the flood. We should like to assume for them so great an antiquity, and to be able to regard the makers of the flint and stone implements, as also the makers of the oldest of these canoes, and as belonging to the same tribes and to the same general epoch. This would greatly tend to confirm our conclusions; for, as they do not furnish any very decisive proof of great antiquity, and as in that case they would claim to be of the same general age as are the remains of man found in our caves and gravels, it would follow that the latter are immensely more recent than is supposed by many geologists; and that from six to nine thousand years is an ample allowance for the oldest of them. But we do not feel it to be necessary to push this advantage. We are content to rest our conclusion on facts that are unquestioned.

SECTION IV.

THE REVIEW OF THE NATIONAL TRADITIONS RESPECTING THE NOAIC DELUGE.

Traditions of the deluge.—Such may expect to be found.—Traditions mentioned by Josephus.—Berosus, the Chaldean.—Hieronymus.—Mnaseas.—Nicolaus, of Damascus.—Mr. Catcott on the deluge.—Roman traditions.—Greeks.—Assyrians.—Babylonians.—Egyptians.—Persians.—Hindoos.—Chinese.—American traditions.—From north to south.—Missionaries have found the same traditional lore in heathen nations.—Such traditions important.—Must have one origin.—The peoples holding them must have sprung from the same stock.—The deluge an absolute certainty.—Theories which ignore the deluge sure to be false.—The traditions prove that the present nations date no farther back than the period of its occurrence.—Traditions most mixed with fable in the most distant nations.

Ir this solemn event has occurred in connection with the history of the present races of mankind, then we may expect to find amongst them national traditions respecting it. Such traditions may be found distorted, wrapped in myth, and mingled with a large amount of fable; but nevertheless the principle and leading facts will easily be distinguished from that which is false and adventitious. And such national traditions exist. In his widest dispersions man has carried with him a knowledge of the flood which destroyed the ancestors of his race, and left the earth a desolation.

Some of these traditions we shall endeavour to collect and review. The Jewish historian, Josephus, names some of these traditions. The first author he quotes is Berosus, the Chaldean; who, when describing the flood, remarks: "It is said there is still some part of this ship in Armenia, at the mountain of the Cardigæans, and that some people carry off pieces of the bitumen, which they take away and use chiefly as amulets, for the averting of mischiefs." Hieronymus the Egyptian, also, who wrote the "Phenician Antiquities," and Mnaseas, and a great many more, make mention of the same. Nicolaus, of Damascus, in his ninety-sixth book, hath a particular mention about them, where he speaks: "There is a great mountain in Armenia, near Minyas, called Baris, upon which, it is reported that many who fled at the time of the deluge were saved, and that one, who was carried in an ark, came on shore on the top of it, and that the remains of the timber were a great while preserved." For the following examples we are indebted to A. Catcott, in his work on the deluge, published in 1761.

This work, though abounding in misconceptions, is yet highly valuable, and contains many most just and important remarks. We shall only quote from it what is sufficient for our purpose. Those who wish for further information, we refer to the work itself.

He begins his quotations with the Roman poet, Ovid. That poet, after describing the aggravated impiety of mankind at the time of the deluge, says,—

"But Jove

Concludes to pour a watery deluge down,
And what he durst not burn, resolves to drown.
The northern breath, that freezes floods, he binds,
With all the race of cloud-dispelling winds.
The south he loosed, which night and horror brings;
And fogs are shaken from his flaggy wings.
With rain his heavy robe and mantle flow,
And lazy mists are bordering on his brow.

The skies from pole to pole with peals resound,

And showers enlarged come pouring on the ground.

Impetuous rain descends.

The floods, by nature enemies to land,
And proudly swelling with the new command,
Remove the living stones, that stopped their way,
And gushing from their source, augment the sea.
Then with his mace the monarch struck the ground;
With inward trembling earth received the wound,
And rising streams a ready passage found.
Th' expanded waters gather on the plain;
They flood the fields, and overtop the grain;
Then, rushing onwards with a sweeping sway,
Bear flocks and folds and lab'ring birds away.

Now seas and earth were in confusion lost; A world of waters, and without a coast. The most of mortals perish in the flood; The small remainder died for want of food.

A mountain of stupendous height there stands Betwixt th' Athenian and Bœotian lands; Parnassus is its name, whose forky rise Mounts through the clouds, and mates the lofty skies. High on the summit of this dubious cliff, Deucalion wafting, moored his little skiff. He, with his wife, were only left behind Of perished man; they two were human kind."

Such were the traditions of the ancient Romans, as embodied and expressed by one of their own poets.

In the "De Dea Syria" of Lucian, we have not only the testimony of the Greeks, but also of the Assyrians and Arabians. He writes: "Many say that this temple at Hieropolis, in Syria, was built by Deucalion. the Scythian. That Deucalion, I mean, in whose time the greatest inundation of water was. I have heard in Greece what the Grecians say concerning this Deucalion. The story they relate is as follows:—The present race of men are not the first, for they totally perished, but is of a second generation, which, being descended from Deucalion, increased to a multitude." For their great wickedness, "on a sudden the earth poured forth a vast quantity of water, great showers fell, the rivers overflowed, and the sea rose to a prodigious height, so that all things became water, and all men were destroyed. Only Deucalion was left unto a second generation, on account of his prudence and piety. He was saved in this manner: he went into a large ark or chest, which he had, together with his sons and their wives; and when he was in, there entered swine and horses and lions and serpents and all other creatures which live on earth, by pairs. So they all sailed in the ark while the waters prevailed. These things the Greeks relate of Deucalion." That is, the scriptural Noah.

The same traditions, but much more abundantly mixed with mythic lore, prevailed amongst the ancient Egyptians.

We also find them in the history of ancient Babylon. Thus Josephus says again: "Now this Berosus, following the most ancient records, writeth the history of the deluge, and of the destruction of mankind therein, just as Moses hath related it; and also of the ark, in which Noah, the chief or leader of our race, was saved when it was carried to the tops of the Armenian mountains. We must therefore allow these premises,—that after the earth was dried from the waters, there were no more than the above eight persons in the Armenian saga, and that from these all men upon earth sprung; and for this reason it is that the Scythians justly say and call Noa the father of all the greater and lesser gods, the author of the human race, the chaos, and seed of the world."

The same general facts may be gathered from the historical traditions of Assyria, as quoted by the historian Eusebius.

Dr. Hyde informs us, "that the orthodox among the ancient Persians believe in a deluge, and that it was universal, and that it overwhelmed the whole earth."

Similar traditions are found to prevail in India. According to the accounts collected from the Hindoos about Madras and the Carnatic, the violence and wick-

edness of men provoked the just indignation of the Almighty; and He sent a flood, which destroyed all nations, without exception. The most dreadful rain that had ever been, poured down from the skies; the rivers swelled, and spread themselves rapidly over the surface of the whole earth; the sea broke its appointed bounds, and mixing with the rivers, which now had left their channels, soon covered the highest mountains.

Dr. Shuckford has collected the same principal facts respecting Noah and the deluge from the traditions of the Chinese. [See Mr. Catcott's quotations from him, page 69 of his work.]

The same traditions were found among the many scattered tribes and nations spread over the vast continent of America. The North American Indians, the people of Cuba, of Tierra Fuego, of Peru, of Brazil, etc.,—all had a traditional knowledge of the deluge, of the preservation of Noah and his family, and of the repeopling of the earth by his descendants.

Missionaries have found similar traditional lore among heathen nations.

Such traditions are highly important to our inquiry. They can only have had one origin, and must have been based upon one stupendous and impressive event. Traditions so general, and in which all the principal facts so entirely agree with each other, must not only have had their foundation in truth, but in the same truth. On no other ground can their extent and harmony be accounted for. To suppose them to be based on fable,

or to be mere myths, is absurd. Their agreement and extent render such a supposition impossible. That all the nations who have retained any knowledge of the subject—nations spread over the face of the earth—should believe in a deluge of the same general character, caused by the same means, and having the same results and the same exceptions, it is impossible to conceive, unless such a deluge occurred. This is the only rational conclusion in the case.

These traditions also prove the unity of the manifold peoples among whom they are found. They show that such nations, however diversified in colour, and changed in physical character, have all descended from the persons miraculously preserved in the ark. That any of these nations have sprung from apes, or that they have descended from several original human pairs in the regions where they are found, are suppositions utterly at variance with the fact of these traditions. That traditions so wide-spread, found among nations in all stages of civilization, and so harmonious in their principal facts, should, in each case, have been forged, or have grown out of myths, is a supposition too extravagant to need a moment's refutation.

We regard, therefore, the biblical deluge as a matter of absolute certainty. To deny it, is to deny every sort of evidence on the ground of which men believe in the occurrence of past events. If we have not evidence sufficient to make a belief in the biblical deluge in the highest degree rational and imperative, then not a single event in the past history of nations is worthy of credit. Hence, to disbelieve it, can only be set down to perverseness and to a determination to reject it at all hazard.

But if the deluge has occurred within the period assigned, then it produced the effects we have attributed to it; and therefore all the theories respecting the past history of man which ignore the deluge, and which thus attempt to account for all the facts presented by our superficial deposits by the operation of natural causes only, are sure to be false in their conclusions. Such deposits must be supposed to be immensely older than they really are. And such we believe to be the actual mistakes of our geologists respecting the great antiquity of man.

Once more; these national traditions respecting the deluge prove that the present nations of the earth date no farther back than the period of its occurrence. This solemn event forms the most distant point in the horizon of their past history. It was from this, as their central point, that they began to multiply and spread over the earth. Hence, with the exception of their general wickedness and destruction, they knew little or nothing of the men before the flood. Thus, so far as Scripture testimony and national tradition are concerned, any theory which claims for any of the existing races of men a date previous to some six or seven thousand years ago, must be sheer assumption. And weighty and conclusive indeed must be the geological and scientific proof that

can counterbalance this decisive twofold testimony, and disprove its facts! As yet no such proof has been adduced; and until it is, we shall rest assured that all the present nations of the earth have descended from the eight persons preserved in the ark.

SECTION V.

THE PROBABLE DETERIORATION OF THE HUMAN RACE IN MECHANICAL KNOWLEDGE AS THEY BECAME MORE WIDELY DISPERSED FROM THE ORIGINAL DWELLING-PLACE OF THEIR FIRST PROGENITOR.

The decay and deterioration of nations a solemn subject of inquiry.— Ancient examples .- Of Scripture .- Recent ones .- West Indies .-Australia.-The gospel can reach and save them.-It may not avert their natural extinction.—The natural and judicial law operating in such cases.—Examples and declarations of Scripture.—Opinions of missionaries respecting the islands of South Seas.—Difficult to keep up the population.—Some native tribes doomed to extinction.— Have the author of the American ruined cities, and of the lake dwellings thus perished?-The bearing of these remarks on the authors of our cave and gravel implements.-Ignorant and vicious nations never rise of themselves.-Captain Speke's description of African tribes .- No exceptions .- Seeming ones only confirm the law.—Errors of philosophy in the matter.—The principles applied to the men before the flood, and to their remains.—Nations more ignorant in proportion to their wider dispersion.—Great degradation at the time of the flood.—Anticipated that discoveries will confirm this.—The deluge had, perhaps, a natural as well as moral necessity.-The remains indicating low knowledge, most probably antediluvian.—The deluge not exploded.—Conclusion.

THE decay and deterioration of nations forms a most important as well as solemn subject of inquiry. As a matter of fact, we deem it unquestionable. History abounds with examples, and they belong to all periods.

Such examples are given in the Bible. "Nations great and mighty" had preceded the Edomites and others, in the neighbourhood of the promised land, long ere their Divine King destroyed the nations of Canaan before His chosen people Israel. "The Anakim, Zamzummim, and Rephaim dwelt there before." These nations had perished. Egypt, Babylon, Assyria, Persia, Greece and Rome, and now Turkey, present other impressive illustrations. Where are many of the mighty nations and kingdoms of the past? Some few of them remain, but how fallen! Others have utterly perished, and their very sites have become a matter of question!

Nor are recent examples wanting. Where are the original inhabitants of the West Indies, of many parts of America, of Tasmania, and of other, till recently, heathen lands? We palliate not the foul crimes of the white man. On the contrary, we repudiate and condemn all the wrong and injustice which he has inflicted on native tribes. We would join in the strongest reprehension of many of the modes by which he has gained possession of their lands, and of the means which have resulted in their destruction. But still we cannot close our eyes to palpable fact. Thus, spite of every effort which benevolence and Christian missionaries can put forth to prevent it, some of the most degraded of the heathen tribes are fast hastening to extinction. It would almost seem to be a great law of that moral government beneath which man is placed, that when, through vice and folly

and utter moral depravity, he has reached a certain point of degradation, his destruction becomes inevitable.

We believe in the power of the gospel to reach and save the most degraded of men. We believe also that it is fitted immensely to elevate man physically, as well as intellectually and morally. Still, experience seems to decide that, when the process of degradation has reached a certain point, it is impossible to arrest it; and that it continues, even amid civilizing influences, to go on until the tribe that has reached it, "dies out."

Such is human nature when left to itself This sad process is partly natural, and partly judicial. rance and vice enfeeble, give entire predominance to the passions, sink the man into the brute, destroy "natural affection," lead to deadly treachery and infanticide, to the neglect of modes of life fitted to provide proper sustenance for the body; and thus insure an ever descending degradation, which of itself must close in extinction. Met by counteracting influences before it has reached to too low a point, it may perhaps be arrested, and even reversed; but if that point has been reached, arrest seems impossible. Thus the feeble inhabitants of the West Indies, discovered by the Spaniards, have mostly perished. And in defiance of all the attempts made to save and elevate him, such seems to be the hastening doom of the native Australian.

Nor can we, with the solemn declarations and examples of sacred Scripture before us, shut out the *judicial* aspect of this grave question. The judicial, in fact,

follows the natural consequence of ignorance and vice. Hence, in the destruction of the nations mentioned in Scripture, already referred to, Divine agency is asserted. The Divine word concurs with experience in proving the existence of a law in the government of God,—that when, through its wilful ignorance and vice, a nation has reached a certain downward stage, it shall perish from the face of the earth. We are not called to solve the mystery of this Divine procedure, nor to vindicate its equity. "The Judge of all the earth will do right." We resist the temptation to speculate on these solemn facts. We have simply to do with them as facts.

Missionaries have expressed an opinion, that had not the means of spiritual instruction and renovation been sent to them when they were, some of the heathen tribes found on the beautiful islands of the South Seas, would, in all probability, soon have become extinct. Their gross vices, savage wars, and cruel infanticide, would soon have resulted in the depopulation of the islands which they inhabited. In the islands in question this sad process is arrested by the introduction of the gospel, and its train of hallowing and civilizing influences. Still, it is an admitted fact, that now in many of these cases the population is with difficulty kept up to its original point. Part of this painful result must be attributed to the vices, diseases, and ambition of the white man, and to the unavoidable effect of the change which they are undergoing, in passing from a savage to a civilized state. But are these causes sufficient to account for all the examples. Must not something still be attributed to physical, resulting from mental and moral degradation; and to judicial visitation for the manifold crimes and idolatries which the nations in question have perpetrated? Is it not possible, and does not sacred Scripture declare the solemn fact, that nations as well as individuals "may sin a sin unto death"? Have not nations "filled up the measure of their antiquity," and have perished?

And the difficulty of which missionaries and others complain in keeping up the native population may, in part, be owing to the result of national and judicial law, still operating as the effect of past causes. be with nations as with individuals. If the constitution has been weakened and destroyed by vicious living, though repentance and the saving reception of the truths of the gospel may take place, yet the progress of physical decay is not arrested, though perhaps its fatal consequences may be a little delayed. So it is with nations. We fervently hope, however, that the twofold law still apparently operating in the islands of the South Seas, and elsewhere on the continent of America, and yearly decreasing the Indian and South Sea population, has been arrested in time to save them; and that the gospel, with its precious balm for soul and body, and with its powerfully civilizing influence, will enable them to resist the deadly contact of European vices and diseases, and to withstand all the fatal influences of the great change through which they are

passing; and that in the future they will rise to nations great and prosperous, and form standing trophies of the power of the gospel to save nations from physical and political, as well as from spiritual and eternal death.

But we painfully apprehend that the degraded Australian and some others are doomed to extinction. We expect this from the operation of the same twofold law that renders inevitable the death of the diseased and enfeebled debauchee. In either case nothing, perhaps, but miracle could save from death. Physical, as well as moral law, has been violated past remedy, and thus death is the inevitable close. Look at that strange group of Australian savages, and examine their physical structure. Are they at all fitted for the toils and duties of civilized life? Assuredly not. Nor can you subject them to that life without destroying them. They languish and die amid all its comforts and appliances. Their only chance of a little longer existence is in their own native freedom and indolence. These may be humbling, and to some startling, statements; but they rest on the surest philosophical and scriptural grounds.

Not that our Christian duty is less imperative. On the contrary, just as the physician and benevolent friend would employ every possible means to save the ruined debauchee, and to prolong his life, so the Christian public of this country are bound to put forth every effort, and to employ every means which the tenderest benevolence can suggest, to save and to prolong the temporal existence of the nations that seem to be passing away. If we cannot prevent their extinction, let us stave off the calamity as long as possible, and with the light and peace of Divine truth, and the blessed hope of immortality, cheer, as far as we can, the last days of these expiring nations. To take the execution of law into our own hands, and by wrong, oppression, and slaughter, to hasten their extinction, is highly criminal, and will receive the deepest condemnation.

In the light of the above remarks, it becomes highly interesting to inquire. Have the authors and inhabitants of the ruined non-historical cities of Central America, and of the lake-dwellings in Switzerland and Ireland, thus perished? We think that the evidence in these cases shows them to be of postdiluvian date. The many native huts described by Darwin in South America, and the long-abandoned copper-works near Lake Superior, of whose date and authors the present inhabitants have no knowledge, may belong to the same period. How did they perish? and did they all perish? Do fragments of them still remain among the present inhabitants? What is their probable date? We know not: to these important questions, no answer can be obtained. But the above remarks throw light on these questions, and suggest probable causes for the extinction of the authors of these ancient remains. It is possible that in them we see the final result of the operation of natural and judicial law. If the action of fire be generally evident, their destruction may have been judicial. But be this as it may, these silent ruins,

these inexplicable huts and lake-dwellings, and these long deserted mines, of whose authors and inhabitants we cannot catch the most distant echo, are solemn monuments, telling very likely of *extinct* peoples, of nations of the past, who either perished through their own induced physical degradation, or, like the aggravated sinners of the plain, were destroyed by the judicial vengeance of heaven.

The bearing of these remarks on the human authors of the remains found in our caves and valley deposits, must at once be obvious.

But before we more particularly apply them, we shall state and illustrate another important law: That nations and tribes of mankind, deeply sunk in ignorance and vice, are never recovered to knowledge and to mental and moral improvement, without some external influence being brought to bear upon them. In such nations there are no elements of self-improvement. On the contrary, all experience proves that they "wax worse and worse." True light ever grows more dim, and every right principle more and more feeble. from ecclesiastical history, we must conclude that the nations of Northern Africa are more ignorant and more destitute of moral principle now than they were in the days of the venerable Bishop Cyprian. Contrary to the plausible theories of philosophy, the tendency of nations "left to themselves" is downward. They do not advance, but recede. The darkness thickens, and the moral atmosphere becomes more putrid and loathsome.

Let the objector read Captain Speke's description of the grovelling superstitions, revolting cruelties, and loathsome moral pollutions of the African tribes and kingdoms through which he passed, and among whom he sojourned. Will such nations ever rise and improve, unless the blessings of the gospel, and the softening and elevating influences of a pure civilization, are brought to bear upon them? We answer, never. The contrary will be the inevitable result.

Then, according to this law, we should expect that a scattered and sparse population would, all other things being equal, be the most ignorant and degraded. Even savages, when living in society, and cultivating a more constant intercourse with their fellows, will be less degraded, both in body and mind, than their scattered and wandering brethren of the swamp or jungle. And such are the facts that travellers are ever bringing beneath It is thus clear, that nations left to themour notice. selves, and kept apart from all external elevating influences, so far from advancing in civilization and mechanical art, retrograde, and become more ignorant and depraved. In some degree, the physical and intellectual powers collapse with the moral ones, and, if not arrested in time, the result is national death.

And if such are the real facts of the case, then philosophy has been travelling in the wrong direction, and has consequently been landed in a false result. Thus she looks on the lowest proofs of mental development, of the acts of civilization, and of physical perfection, as

being the oldest, whereas these laws of fact and of observation would prove them to be the latest, of any people on whom no elevating external influence had been brought to bear. We, therefore, should not measure the period between the two by the time it would take for a nation to rise from the lowest to the highest state. but by the time it would take for such a nation to descend from the highest to the lowest; which, as experience shows, may be much more rapid. There is not a single example to disprove this. Not an opposite case can be cited. Not a nation has been known to advance, but through some external improving influence. If so, let our philosophers cite it. All the known examples prove the contrary. Before the gospel was brought to them, the now Christian nations of the South Seas tell us that they only became worse and worse.

Then, on the principles of philosophy, how shall we account for the corruption and decay, and ever-deepening ignorance of ancient historical nations? It is in Paul's description of the fearfully darkening and degrading influence of wilful ignorance and revolting vice, that we must look for the solution, and not in the speculations of philosophy. In many of these cases, the deterioration was great in the *midst*, and in spite of ameliorating and improving external influences; what, then, must it be where *no* such influences are present, and where the downward tendency is not only unchecked, but accelerated by all they see and do!

Hence we feel assured that our philosophers are reading the history of extinct human populations in a wrong direction. No living examples support their mode of reasoning. Hence, must not their conclusions be false? They misread the data. It might require a great length of time to mount the lofty and difficult steep, pressed down by heavy weights, but not a great length of time to descend from the summit to the base.

The reasons of this palpable fact, only, we fear, imperfectly understood, and as much as possible ignored and disguised by a secular philosophy, need not be explained to the intelligent believer in the doctrines of the Bible. He knows why man "destroys himself." But leaving out this distasteful data, and often trying to ignore it, philosophy sets out on wrong principles, speculates without taking in the data absolutely necessary for the right solution of her problems, and therefore it is not surprising that she arrives at results contrary to the teaching of Divine truth.

But are there no exceptions on which philosophers can base their conclusions? We believe not. The seeming exceptions come under another category, and are those produced by improving external influences. Thus the inhabitants of the cities of South America, who were found by the Spaniards to possess a considerable degree of civilization and of social development, evidently owed a large portion of both to external influence, and to the action of social intercourse which that influence led them to cultivate, by forming them into

cities and large groups of individuals. The presence of that influence may be clearly gathered from their traditions respecting the deluge, and the persons who were their founders. Speaking of the various notions which they held concerning these points, the historian Acosta remarks that "Others report that six, or I know not what number of men, came out of a cave by a window, by whom men first began to multiply, and for this reason they call them Pacaritampo; and therefore they are of opinion that the Tambos is the most ancient race of They say also that Mango Cupa, whom they acknowledge to be the founder and chief of their Inquas, was issued of that race, and that from him sprang two families or lineages, the one of Havan Cusco, the other of Hurni Cusco. They say, moreover, that when the kings attempted war, and conquered sundry provinces, they gave a colour, and made a pretext of their enterprise, saying that all the world ought to acknowledge them, for all the world was renewed by their race and country, and also that the true religion had been revealed to them from heaven."

In this account we see a natural blending of very ancient with more recent events, and a confounding of the persons who survived the biblical deluge with the founders of their kingdoms, most probably several centuries before they were invaded by the Spaniards. But the point most obvious in the account is, the presence and action of some mighty external influence. In this their kingdoms and civilization had their principal

origin, and it formed the starting-point of their social improvement. Whoever these Inguas were, and whatever might be their origin, they are a foreign element of superior power and intelligence, and arming themselves with lofty pretensions, gain an ascendancy over the savages whom they subdue, and employ their superior intelligence and power to civilize and improve them. by forming them into states and kingdoms, and by teaching them some of the ruder forms of war and of agriculture. Such are the obvious inferences which these national traditions suggest. Their civilization was owing to improving external influence. This conclusion is further proved by the fact that the various Indian tribes found beyond the limits of these kingdoms, were as uncivilized and degraded as are the Patagonians of the present day. [See "Dr. Robertson's History of America."]

We are thus persuaded that no exception exists to the law laid down. Degraded man never improves of himself, and apart from some elevating external influence; and where no such influence is present to retard it, and to urge on man in the contrary direction of improvement, he not only sinks lower and lower in the scale of intelligence, but, as a consequence of the mysterious yet certain law of connection between lawless passion and physical enfeeblement, also into physical degradation and imbecility. And even the most civilized of the American nations, when first discovered by the Spaniards, were found to be feeble in physical development,

and low in their degree of mental power. [See the history referred to above.]

It is thus certain that philosophy commits a very grave blunder, when she attempts to read the history of past nations from the less to the more perfect forms of their civilization. Hence the calculations based on such misread data, and the conclusions attempted to be drawn from them in favour of the great antiquity of man, are utterly unsatisfactory, and are unworthy of our acceptance.

Our way is now prepared to apply these important principles to actual phenomena. They would lead us to expect his deterioration in mechanical art, the more widely primal man became dispersed from the region forming the cradle of his race. Seeming exceptions may occur, but the foregoing facts and arguments will enable us to account for them. External counteracting and conservative influences would be likely to be found in greatest number and cogency in countries contiguous to the one first peopled by man. There we might expect the clearest knowledge of man's Divine origin, of his fall from his primal state, of the evangelical promise of the Deliverer, of the design of sacrifice, of the Divine hatred of evil, and of the mode of Divine worship; and there, too, the pious teaching and example of the godly patriarchs would be most powerfully felt. There, too, the arts of agriculture and of pastoral and domestic life, and, alas! also of war, would be most diligently cultivated, and would be

found in the greatest perfection. There also, the counteracting external influences would operate the longest to check and retard the downward tendency ever manifested by fallen man.

Thus, all other things being equal, the more distant the region, and the later the period, the more degraded should we expect to find man to be. Here and there, of course, external influences might operate to form exceptions. Signs of a higher civilization may possibly turn up in different localities. Then such civilization would be preserved the longest among large groups of men. As populations became more widely dispersed, they would, as a general rule, become more sparse, have much less intercourse with each other; would, in a great measure, depend on the chase for their sustenance; and, from simple disuse, would be likely soon to forget all agricultural and pastoral art. All that we might expect to find them retaining, would be skill sufficient to manufacture implements for the chase and war; such as hatchet-like weapons, stone hammers, and arrow and spear-heads.

The pastoral tribes, so long as they continued such, would retain a somewhat higher knowledge; but would not, except by elevating external influence, rise above the degree of knowledge necessary for their calling. Then, as in many instances, in their wider dispersion, such tribes could not take their flocks and herds with them, we should expect to find them substituting the hunter's for the pastoral life, and soon sinking down to

its level. And thus, long before the period of the deluge, we should look for extensive signs of modes of life similar to those which now obtain among the most savage of heathen tribes. Preventing influences would ever become fewer, and would operate more feebly, and thus the deteriorating process would receive an ever-growing acceleration. Such are the facts clearly indicated by the flint and stone implements of our cave and valley deposits for which so great an antiquity is now claimed.

But it may be asked, if these implements are antediluvian, where are the remains of their authors? cannot tell with certainty. If they had cities, the flood might entirely sweep them away. If the sites of Babylon and Nineveh are scarcely known, no wonder if all trace of antediluvian cities has vanished. the only remains we could expect to find, in addition to those of man himself, would be a few works of art, and, in the more distant regions, stone tools and weapons for domestic and agricultural purposes, and for battle and the chase. These we have found. And as to the countries where we look for the highest proofs of civilization, they have as yet been but little explored by geologists and antiquarians. Such proofs they will probably yield; but if so, they will, for the most part, be found at considerable depths beneath the surface, for, in most instances, they would be covered up by the debris of the deluge, and perhaps by much of that of the antediluvian period. In these eastern regions, does not a rich harvest await the reapers?

Not that we expect them to yield any proofs of very exalted intelligence and civilization: some few exceptions perhaps may be looked for, but on the whole we expect only a moderate type. The Bible distinctly states the powerful operation of causes which would inevitably lead to a low result. Hence, if any remains of antediluvian art are found, we should expect the latest in time to be the rudest in structure.

They will not be found to form any exception to the results which the great law operating upon them has produced in every other example. All the influences which degrade man, which utterly debase his mind, which sink him into insensibility and ignorance, and which enfeeble and degrade his physical structure, were in most terrible and wide spread operation amongst It was the rule of lawless passion, of extreme violence and pollution, and of every species of moral "The earth was filled with violence!" corruption. "All flesh had corrupted its way!" What, judging from present and historical fact, and from scriptural declaration, would be the result of this, operating for many centuries? Need we wonder, that under the long rule of the lowest and basest of passions, human skulls should become brutal in their form, that many of them should exhibit the lowest types of intelligence, and that they seem to have been little above the irrational creatures themselves. All this, on biblical and experimental principle, is inevitable result. It is cause producing with terrible certainty its declared and necessary effects. It is just what we should expect. What geologists are actually discovering, an enlightened believer in Scripture and careful observer of God's moral government would, under the circumstances, confidently predict. Thus, so far from surprising us, these evidences of low physical development and of civilized knowledge, are just what we should expect to find; and our only surprise would be if we found them not.

Indeed, when looking at the circumstances of the case, we have sometimes been disposed to indulge the solemn thought, that the deluge had a natural as well as a moral cause. The terrible physical degradation and mental imbecility, induced by the long rule of dark and polluting passions, rendering the destruction of the "sinners" before the flood an imperative necessity. same twofold law which was operating, and had for many centuries been operating, upon them, is now operating upon the savage heathen tribes, that seem fast hasten-How could degraded antediluvian ing to extinction. men answer the Divine purpose in creating the human Hence it is said, that "the Lord repented that He had made man;" and, as the terrible remedy in the case, He resolves, with the exception of righteous Noah, to sweep them all away! We feel that we are here trenching on awful mysteries. But how marvellously do all these facts point to one conclusion! Man, left to himself, does not rise, does not improve in knowledge and mechanical art; but he sinks, and becomes more and more degraded, until he ceases from the earth.

We conclude, therefore, that philosophy utterly mistakes when she asserts a great antiquity for remains, because they indicate a low state of physical and mental development; and that, to arrive at the truth, she must read the history of these remains in an inverted order. Then we further conclude, that the human remains found in our cave and valley gravel deposits, are just such remains as we should expect the antediluvian man of the Bible to leave, and thus feel compelled to believe that an antediluvian source is unspeakably their most probable one.

Then this conclusion is strengthened by the fact, that if these remains are not antediluvian, then no antediluvian remains whatever have been found. But must not such remains exist, and exist under conditions similar to those from which human remains have been obtained? Could antediluvian man inhabit the earth for more than two thousand years, and then all of his last generation be suddenly swept away by a deluge, and yet no vestige of his remains be left behind? not such a supposition a monstrous impossibility? But we know of no such vestiges, unless the bones and flint and other implements actually found in caves and gravels are allowed to be such. If even the deluge were denied, somewhere in the deposits of the past, the remains of man, and of his cotemporary animals, who inhabited the earth from six to nine thousand years ago, must exist. But where are they, if we are not to recognise them in the ancient remains actually discovered in diluvial sands and gravels?

These and kindred objections which might be urged against the startling antiquity claimed for the deposits in question, we cannot but regard as insuperable. Allow the biblical flood, so clearly proved by Scripture statement and national tradition, and, including the effects of the long antediluvian period, we have a cause equal to produce all the phenomena from which this great antiquity is inferred, and a cause which will more fully account for the apparently conflicting character of that phenomena than any other cause yet assigned.

What, then, is the conclusion to which an unprejudiced mind must come on the subject? Do not all the above facts and considerations render a belief in the antediluvian age of these remains unspeakably more rational and sober than any belief in the enormous antiquity now claimed for them?

And let us not be tauntingly told, that the diluvial theory has long since been exploded. By whom has this feat been accomplished? The peculiar theories of Buckland and of Cuvier may in part have been exploded; but we are not defending such theories, and do not hold ourselves responsible for them. It is in the positively asserted biblical deluge that we believe, and the deluge to which all national tradition points. This diluvial theory is not exploded, and never can be. Its historical and traditional base is too deep and massive ever to be exploded by the hypothesis of man, or ever to be shivered to pieces by the hammer of the geologist. A past deluge of a supernatural and stupendous

character, is an absolutely certain fact; and as that deluge must have produced corresponding effects, any theory respecting the past history of man which *ignores* those effects, must utterly misread its data, and thus inevitably land us in false conclusions.

Such is the result at which, at the end of the second, as well as of the first chapter of this work, we have arrived. As far as archæology teaches, we see no reason to doubt, either the Divine origin of man, or the unity of his race, or the antediluvian age of the remains of man that have been found in our caves and gravels, but on the contrary, the strongest and most concurring evidence for their entire truth.



CHAPTER III.

THE GEOLOGICAL HISTORY OF MAN.

This chapter will embrace preliminary remarks on man's geological history; recent geological changes; the consideration of theories respecting the formation of river and valley gravels and their subsequent denudation; and the proofs that the biblical deluge forms the best solution of the phenomena from which man's great antiquity is inferred. Conclusion.

SECTION I.

PRELIMINARY REMARKS ON MAN'S GEOLOGICAL HISTORY.

Attempt to separate the true from the false.—Difficulty of this.—Data drawn from local phenomena.—The principles to guide the inquiry.

—The interests at stake.—Nature's record in harmony with those of the written word.—The data desired.—Attempt to separate the misleading from real evidence.—Uncertain age of superficial deposits.—

Coasts of the Forth.—The present arrangement of materials.—No proof of order in regard to time.—The law of rearrangement.—"Cinder tips."—Wash-heaps of Cornwall.—The process not a slow one.—

The proofs of stratification, etc., not denied.—All the evidence of antiquity not deceptive.—Heavy bodies sink deeply into soft strata.—Example cited.—Doubtful phenomena of India.—Probably the same age as those of Europe.—Ferguson on the delta of the Ganges.—No reliance to be placed on borings in deltas.—Inferences of Dr. Falconer not proved.—No era has yielded us results hostile to our previous conclusions.

Before we proceed to the direct examination of the geological evidence bearing on the past history of man, we deem it necessary to preface our observations on the subject by a few preliminary remarks. By clearing away from it all that is extraneous and all that does not strictly belong to it, we shall be able to examine and weigh that evidence in its simplest light, and under circumstances most favourable for forming a just and impartial conclusion respecting it. But to accomplish this is no easy task. Recent and ancient phenomena

are so blended together, that it is most difficult, and often quite impossible, to separate them. The different periods of the past have no distinct lines of division between them. We cannot, with any precision and certainty, say where one ends and the other begins. This is also true of the more ancient geological deposits. Except where there is decided unconformity, and a newer formation lies on the upturned ends or denuded surface of older strata, or there is a marked change in mineral character, it is difficult to determine the top of the one and the base of the other. There are transition beds; and one formation often imperceptibly runs into another.

But the difficulty mentioned above is often greatly increased in the case of the superficial and patch-like formations with which the geological history of man Here great uncertainty often exists. has alone to do. After examining many localities, and reading the descriptions published respecting many others, we feel persuaded that no certain definite line can be drawn between any of the deposits which overlay the boulder clay of the glacial period. That deposit, wherever it exists, supplies a clear basement bed; but the deposits lying upon it present no lines of demarcation that can be relied upon for all the examples. It will therefore, be difficult to separate between the real and the apparent evidence, and to say what proves and what does not prove the great antiquity of man. Still the attempt is necessary; and we must, as far as is possible, remove from the evidence bearing on the past history of man, all that is extraneous and doubtful. False data, or data falsely construed, must lead to false conclusions, or to results that are unworthy of credit. And where it is so difficult to separate the real from the apparent, the true from the false data, and where, therefore, false conclusion is so possible, we ought to exercise the utmost caution, and to come to no conclusion until after the most extensive and careful observation and reasoning, and on data that is so constant and uniform in its character as to render it morally certain that the conclusion reached is the true one.

Nothing, for example, can be more uncertain than conclusions drawn from local and limited phenomena. That distinguished geologist, Sir R. Murchison, has ever been insisting on this fact. We have often, indeed, admired his depth and breadth of view, and his masterly generalizations on difficult geological questions. How often has he told us, that nothing but a general phenomena can warrant us to form a general conclusion. From mere local phenomena alone, we can infer nothing with regard to other localities. To speculate on limited local appearances, and from such appearances to infer great physical changes, and extended periods of time, is a most questionable mode of procedure, and the conclusions reached by such modes are unworthy of acceptance. And we cannot but regard, as of this kind, some of the examples alleged as proofs of man's great antiquity. Such examples we would separate from

those which are so constant and uniform in their general character as to merit a well grounded confidence. Such a generally uniform and constant character is presented by our cave and valley gravel deposits; and, therefore, the conclusion most clearly suggested by all the examples, must be the one that approaches the nearest to the truth.

Such are the principles which we would lay down for our own guidance, and by the results of which we shall resolve to abide. In an inquiry so grave, and on the determination of which consequences the most momentous depend, the utmost fairness, and the most searching scrutiny are demanded. Flippant assumption deserves the severest rebuke. For honest conviction we have the utmost respect; but for assumed position, and for the taunts of dogmatism, we have none. Unproved yet bold assertion may captivate the multitude, but the earnest and honest mind can be satisfied with nothing but palpable fact or probable theory. It is among the latter that we covet to rank, and we shall do our utmost to deserve the position.

The precious and important interests at stake in the case are enough to make any honest man in earnest in searching for the truth. The question at issue is not an indifferent one, and one from the decision of which no serious consequences can flow; but it is in the highest degree grave, and involves the most weighty considerations. The difference between a decision that would cast suspicion on the authenticity and Divine in-

spiration of the Bible, which would loose us from the moorings of eternal truth, which would include theories at utter variance with the whole doctrinal system of Divine revelation, and the tendency of which is to plunge the thousands of the young into the vawning and degrading gulfs of scepticism,—the difference between such a decision, and one that is in harmony with both the history and doctrine of Scripture, cannot be over-estimated, nor be invested with an importance too commanding and impressive. That for which we contend is of infinite value to mankind. If the biblical account of man's origin, and of the proximate date of his introduction on to the earth, be untrue (and all this seems to be tacifly assumed in many recent speculations on the subject), then, of course, the Bible is unworthy of credit; and we have no sure foundation for our faith.

But such a result is not yet reached, nor have we any apprehension that it ever will be reached. Nature's records, when correctly read, must ever agree with the written records given by nature's Author. But in order rightly to read them, we must not blend the recent with the past, nor confound the original with the introduced. As far as is possible, the records must be read in their natural and chronological order. But to do this fully, a much larger amount of carefully collected data is necessary. All our cave and valley deposits should be most carefully examined, and every implement and bone or fragment of bone, and every relation of

these to each other, and the precise condition of each, should be carefully registered and classified.

Such is the character of the data which we desire, in order that we may arrive at a satisfactory conclusion respecting these ancient remains. Such, in a good measure, is the kind of data which the Geological Society of London sought to collect in the case of the fossiliferous cave at Brixham, in Devonshire. We are sorry that we have not yet seen any published account of all the results of this praiseworthy course. To examine such a register of carefully collected facts and relations would be in the highest degree interesting. That we may, so far as is possible, collect this kind of data from the published and personally observed examples, it will be necessary,—

FIRST, TO ENDEAVOUR TO SEPARATE FROM OUR SUPER-FICIAL VALLEY AND CAVE DEPOSITS THAT WHICH IS DECEPTIVE AND MISLEADING.

That there is a large amount of such phenomena connected with our superficial deposits must be admitted by all who have paid any attention to them. In fact, apart from fossil remains, and the clear order of superposition, or distinct overlying of one bed upon another, nothing can be more uncertain than the age of many of the deposits of sand and gravel scattered over the surface of all countries. And no wonder; for the sands, gravels, silts, and clays of all ages bear a considerable resemblance to each other. Except, for example, where a good section was exposed, we have often found it im-

practicable to distinguish between the undisturbed beds of gravel in the new red sandstone, and the beds that have been re-stratified out of that gravel; and again between both and the superficial and much more recent gravels overlying them. Of all these conditions we have a good number of excellent examples in the pits ranging along the escarpment of the lower new red sandstone, on the south-western part of the North Staffordshire coal-field. Here the clear sections prevent any mistake. We have the original beds of gravel extending along the face of the sections; the gravel-beds washed out of these, where they have reached the surface, and clearly restratified, and then the superficial gravel, apparently mostly unstratified, overlying the whole. But if nothing except the surface had been exposed, it would have been next to impossible to have assigned, with any certainty, any particular portion of the gravel to its proper place in the series. This difficulty we have often felt when examining the many sand and gravel pits we have visited in counties such as Warwickshire, Nottinghamshire, etc., where the new red sandstone constitutes the uppermost formation. And this has especially been felt by us, when, as is the case with the deposits near Longton, all the gravels closely resemble each other in their general character, and appear to have been derived from the When such gravels contain pebbles or same origin. flints, which must have been obtained from the denudation of other formations, then of course we can at once decide that they are more recent than such formations.

But, as will at once be obvious, such considerations as these can have no place when we are endeavouring to ascertain the relative age of the deposits which form the special subject of our present inquiry. For, with the exception of alluvial deposits in valleys, and along the sides and at the mouths of rivers, or those on rising sea-beaches, the deposits we have specially to examine Hence, we can only arrive are the most recent ones. at their proximate date from the fossil remains which they contain, or from their relation to overlying beds: and when neither of these conditions exist, their age, for the most part, is utterly uncertain. Within a radius of from six to eight miles around High Wycombe, Buckinghamshire, we have seen numerous masses of gravel and of brick-earth, which, in the total absence of fossils, and of any overlying beds, have defied our utmost attempts to determine their relative age. of the gravels, as at Penn Church, appear as fresh and as loose as any found on our existing shingle beaches. In one case, at Lane End, about five miles from High Wycombe, we found the doubtful brick-earth and gravels just overlying a bed containing the Bognor-bed or lower eocene fossils. Such deposits abound on the hills around High Wycombe, and are not only found capping most of the hills, but are also found in holes and depressions of the chalk, and in sheltered places on the sides of the hills, where we have often and extensively examined them, but never succeeded in obtaining even the fragment of a fossil, except such as had been washed out of the underlying chalk.

Who shall determine the age of such deposits? They may belong to any period that has elapsed between the close of the boulder clay and the present time. Hence, wherever they may be found, such deposits are no decided proof of great antiquity. Except to tell us that they date from a later period than the glacial one, during which the boulder formation was thrown down,—and that they must, at least, date many centuries back from the present,—these deposits are silent respecting their own age. Hence, for the most part, such deposits must be shut out from the present inquiry.

Nor are such deposits the only ones which may mislead us by the appearances which they present. Let us take, for example, the superficial deposits found on the coasts of the Forth in Scotland. For some of these deposits one class of geologists are claiming a great antiquity; while others attempt to show that they are artificial, and have never been formed by the action of water at all. Some again, from these deposits, argue that a considerable elevation of the coast has taken place, which they assert is still going on; others tell us that there is no real evidence of such an upheaval, and that the rocky parts of the coast, which would the most surely register such changes of level, afford no proof of their occurrence. And yet this doubtful case,and doubtful it must be to suggest to observers such entirely opposite conclusions, -is, in the third chapter of his work on the subject, brought forward by Sir C. Lyell as one of the proofs of man's great antiquity. We

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respectfully contend, that all such dubious cases ought to be excluded from the inquiry; or, if brought into it at all, it ought to be after other and much more unequivocal examples have pointed to a given conclusion, when, if favourable to it, they may be brought in to confirm or to add greater weight to that conclusion. But to make such dubious examples the bases of conclusions is neither wise nor safe. For a fuller account of this example we must refer the reader to the papers of Messrs. Geikie and Chambers on the subject, in the "Quarterly Journal of the Geological Society," and to the report of a paper read before the Geological Society of Glasgow, by Alexander Bryson, Esq., which will be found in the Geological Magazine for June, 1865.

We cite this case, not to give any decided opinion either way, but to show the uncertainty belonging to many of the superficial deposits spread over this and other countries, when such deposits are found alone. Perhaps, on the whole, the evidence in this case preponderates in favour of the upheaval theory; but where present opinion is so conflicting, we shall do well to wait for more carefully collected evidence.

Nor does the present arrangement of materials always prove a succession of order in regard to the time of their deposition. Where, for example, there is a bed of gravel, and a bed of sand, and a bed of silt, it does not always follow that one is much older than the other. A few days might suffice for the deposition of the whole of such beds. In any case of flood or powerful water-action,

the heaviest materials would be deposited first, next the particles of sand, and then the fine silt or mud. Should such examples, therefore, be cited as proofs of great antiquity, we should at once demur to them, and demand the evidence. The mere order of arrangement is no evidence at all, unless connected with other evidence, such as fossil remains, and the presence of substances in the lower beds not found in the upper ones.

Nor must we, while treating on deceptive phenomena. overlook the law, whatever it may be, of rearrangement. That there is such a law, whatever may be its origin or character, is quite certain. Whether it is a mechanical, or chemical, or molecular law or force, or all these combined, we shall not attempt to determine; but that there is such a law seems to us indisputable. No one, for instance, who has carefully observed the marls of the red sandstone, or the sands and marls of the London clay, can reasonably doubt it. The different coloured bands, or layers, must have been formed since the original deposition of these formations. it would be monstrous to suppose that the waters which once held the materials composing these beds in suspension, would throw them down in various shades of green, red, purple, and yellow, etc., in the regular order in which they are now found. And hence, their present appearance must be owing to a rearrangement of the materials which has taken place since their original deposition. If the appearance were simply due to the presence of colouring matter in the respective layers, how comes it to pass that the different coloured beds are so regular, and that the lines of colouring reach over extensive areas? Why should the green or the purple be confined to one bed. We cannot see how either original deposition, or the subsequent distribution of colouring matter, could have produced an effect so uniform and wide spread, as we find in the formations in questions.

The same may be said respecting the alternating beds of clay and limestone found in the lower lias of this country. It would be most unreasonable to suppose that the waters of the ancient lias sea, deposited at one time nothing but calcareous, and at another, nothing but argilaceous matter; and that this regular alternation of beds should go on through a long succession. the only natural conclusion is, that the present appearance of the beds is due to the rearrangement of the materials after their deposition. And most of the formations, more or less, present a similar character. We often come upon appearances most difficult, if not impossible to account for on any other hypothesis. law seems something like the following: "The disposition of homogeneous particles of matter, when dispersed through a mass, to separate themselves from that mass, and to reunite in a series of beds, each of which is, for the most part, composed of such materials only. By chemical action and affinity, or by molecular attraction, or perhaps in other way yet unexplained, the particles of lime are separated from those of clay, and

the clay from the lime, and are rearranged in a succession of alternating beds.

Nor does this process appear to be a very slow one. We have seen a considerable number of rubbish, and especially of cinder, "tips," as they are called in South Wales, exhibiting along the plans of original deposition, a regular stratified appearance. Beds of different colour, and of coarser and finer materials, succeeding each other in a way that could not possibly be owing to the mode in which they were originally deposited; and heaps that have lain from fifty to sixty years, and even for a less period of time, when they have been cut through for railways, or have been removed for extending the works, have exhibited these appearances in a high degree of perfection. And as a proof that some secret but mighty force is at work, changing and rearranging the materials at first indiscriminately thrown down, the writer has in his collection a beautiful specimen of crystals of iron, which was obtained from a cinder tip at the Blaina Iron Works, South Wales. Thus, the process in question may be largely accomplished in a period of fifty years. Not that we should expect it to be so rapid in every case. The rate of rearrangement will, doubtless, greatly vary; and will be greatly modified by the less or greater energy with which the exciting causes operate. But it is enough for our purpose that it can be effected in hundreds, and even in thousands of years, and that it thus forms a phenomena which may greatly mislead us

when speculating on the age of a deposit, where there is nothing to determine its age but the appearance of stratifaction, and the seemingly undisturbed state of the beds.

We find a similar process taking place in the old "earth heaps" of Cornwall. The workmen may have used their utmost skill to obtain from the crushed materials the last particle of tin or copper; but after lying a good number of years, on being rewashed, such old earth heaps again yield a portion of these metals. A fact which can only be accounted for on the operation of some such law as the one already stated. The homogeneous particles must, in some way, separate themselves from the mass and reunite in quantities sufficient to bring them within the reach of the apparatus of the miner. Such phenomena, we think, need a more careful investigation; and ought to have more weight than has ever yet been allowed them, in questions affecting the antiquity or non-antiquity of deposits. The bearing of them on our cave and valley deposits must be obvious to all; and would, if properly applied, separate from the inquiry altogether many of the examples alleged in proof of man's great antiquity.

Not that we have any intention to attempt to discredit the proofs of stratification and of slow deposition. These are too numerous and too decisive to be even doubted. We only wish to separate the true from the false, and the doubtful and misleading from the unequivocal and certain. And the question is, Is there

not a considerable amount of the doubtful and misleading, in many of the deposits for the remains of which so great an antiquity is now claimed? That such is the case we shall endeavour to show when we proceed to examine them. In this respect, the postpliocene deposits stand in wide contrast to most of the older formations, which we have the opportunity of examining over extensive areas and in deep sections, exhibiting a long succession of fossiliferous or well-defined beds. Hence, while there is little dispute about the mode of formation, and the time required to deposit the materials constituting some ancient rock-mass, there are many disputes respecting the mode in which our cave and valley deposits were formed, and also respecting the amount of time it would require to produce them. This fact alone would lead us to conclude that there must, in the latter case, be much that is dubious, and much which points to conflicting conclusions. How otherwise can we account for so great a variety of opinions? For ourselves, we see in these examples the most imperative demands for caution, and the necessity for a long hesitation, before we, on such uncertain grounds, receive conclusions opposed to the teaching of the inspired oracles.

But let us not be misunderstood. We have no wish to insinuate that all the evidence of antiquity supplied by our superficial deposits is deceptive. We have, on the contrary, intimated the kind of evidence that would be deserving of credit; and this, as far as it has been collected, we shall subsequently endeavour carefully to weigh.

Another source of deception, not sufficiently estimated in geological speculations respecting the great antiquity of man is, the probability of heavy and sharpedged bodies sinking deeply into softened and moist materials. Perhaps we cannot better illustrate this source of deception than by transcribing, from the pages of the Geologist for 1861, an account of what occurred during the construction of the Thames Tunnel. "In the course of making the excavations for this work, the difficulties that arose from the nature of the soil in some parts induced the contractors to procure a diving-bell for the purpose of examining the bottom of the river. On the first inspection that took place by means of the machine, a shovel and hammer were left on the spot by the divers; but the tools were, contrary to their expectations, nowhere to be found on their next visit. progress of the excavation, however, while advancing the protecting wooden framework, the missing shovel and hammer were found in the way of it, having descended at least eighteen feet into the ground, and probably resting upon or mixed with, some ancient deposit."

The remarks which the writer of the above makes on the occurrence, very clearly point out a very possible source of error in our geological calculations. He adds, "Supposing these articles had not been recovered by the excavators, and that the soft stratum through which they sunk so deeply had, by some geological changes in the locality, become solidified, and encrusted with

several layers of fresh soil, and that some future geologist had found the lost hammer and shovel in the position described, it would doubtless have furnished as strong an argument in that day for the vast antiquity of the human race as the discovery of the said flint implements in the drift has done in our own." We only endorse these remarks so far as they clearly point out a very possible source of error, and not in their sweeping application to the flint implements. To establish any sort of parallel, many such cases must occur. We should also take exception to several other of the writer's remarks and conclusions; but, nevertheless, he has, on the whole, so many just and appropriate observations, that we shall transcribe the remainder of his article into our pages.

"I am not aware of what material the superincumbent stratum above the drift in that place (?) is composed; but, however compact now, it may possibly, in a former age, have been sufficiently liquified by some aqueous eruption or submersion, to cause substances of the specific gravity of flint to sink through it, as the hammer and shovel did through the soil in the river.

"Whatever difficulties may attend this hypothesis, they certainly are not greater than are involved in the startling and wholly unsupported (?) assumption, that the late flint discovery proves man to have existed before the straits of Dover were formed, or the mammoth and other animals had become extinct.

"After all, it may perhaps be a matter of question

whether surmises and speculations of this kind are at all needful in the present case—whether geologists themselves have not occasioned all the doubt and mystery respecting these flint implements, by assigning an antiquity to the drift formation which does not belong to it; assuming a fact which is only theory based on some erroneous data. Indeed, between the advocates for the remote, and those for the recent, creation of man, it is solely a question as to the authenticity of the respectively ascribed dates, or which of the widely varying periods has the greatest weight of probability or evidence to support And here, apart from the Mosaic account of this event, all the past history and present state of man upon earth go to prove (in geological language) his modern introduction on our globe; that he was the last as well as the most perfect of all the great and marvellous works of God."

This case suggests what must often have taken place during the post-pliocene period, and especially during the prevalence of the waters of the deluge; and will, with the principles supplied by the previous examples, greatly assist us in separating the true from the false, when we proceed to examine in some detail the deposits from which these ancient remains are obtained.

ANALOGOUS DOUBTFUL PHENOMENA IN INDIA.

Much stress has been laid upon the geological phenomena of this vast country: it claims therefore a careful examination. One great source of difficulty as well as

of uncertainty in the case appears to be the want of some such base line, as in Europe and America is supplied by the boulder clay. At least, if such a line exists, it has not yet been ascertained by geologists. This, however, is not a decisive proof of the absence of any such line. It may yet be discovered. At any rate, it does not follow, that because we have as yet little or no proof of a glacial period in India, that no period analogous to such an epoch has occurred in that country. Between the miocene beds and the deposits called pliocene by Dr. Falconer, there seems to be a wide chasm. It may be that the deposit of boulder gravel, which in thick masses overlies the miocene sandstone on the northern slope of the Sewalik hills, is of this age.

The beds, too, which underlie the "lateritic" formation, from which so many stone implements have been obtained, may belong to the same period. But on these points we greatly need more information, before we can determine them. Nor are geologists in a position to assume that there is no break in the series. On both sides there is little beside negative evidence. What fills up the mighty gap between what are regarded as miocene (mid-tertiary) deposits, and the deposits belonging to the human epoch? In the accounts published by Dr. Falconer and others, we fail to perceive any decisive proof of a pliocene period. The deposits which, on the ground of the mammalian remains found in them, Dr. Falconer refers to this epoch, are most probably post-pliocene. If the molluscan data, from

which Sir C. Lyell would have us to infer the proximate age of a deposit, be at all to be relied upon, then it would necessarily follow, that the deposits are post-pliocene; "for the large collection of shells found in them, comprising a considerable assemblage of species, are all of existing forms." This cannot be said of any pliocene formation of Europe; and if it could, then the distinction between pliocene and post-pliocene deposits would be practically annulled. If, therefore, the distinction is to be preserved, it must be allowed that the fossil mollusca bring these Indian deposits within the post-pliocene period.

Nor is this conclusion invalidated by the fact, that the mammalian fauna of these deposits indicate a period intermediate between the miocene of the Irrawaddy and Sewalik hills and the present one. These mammalian remains of the so-called pliocene deposits of India do not differ more widely from the present fauna of that country than does the mammalian fauna of our European caves and gravels, from the fauna now inhabiting these countries. Or, as we should prefer to put it, the mammalian fauna now found in our caves and gravels, embraces as many extinct species as does the mammalian fauna of India, for which Dr. Falconer claims a pliocene age; hence, both are pliocene, or neither are. these Indian deposits are post-pliocene, then between them and the miocene deposits of the Sewalik hills, there is a wide space indeed. Hence a break similar to that of the boulder clay of Europe and America may

have occurred in this space. Enough for our purpose that a space long enough for such a break existed in India as well as well in Europe.

And if such a break preceded them, this would bring these Indian deposits into a remarkable harmony with the cave and valley deposits of Europe. They would bear the same relation to the present state of things. furnish the same relative number of extinct mammalian forms, and would present the same facts with regard to the apparent absence in these deposits, of some shells now abundant in the same neighbourhood. Such facts indicate the lapse of long periods, but not greater than we have assigned for them. Should the newest of these deposits date some six or seven thousand years back, there would since then be ample time for the changes necessary to bring additional species of shells into the neighbourhood, and to cause the partial or entire removal of others. Hence, we see nothing in the facts of the case that would tend to disprove the antediluvian age of the Indian deposits, from which the remains of extinct mammalia and the stone implements of man have been obtained.

We are, of course, aware that a much greater antiquity has been claimed for them; but only, we think, on the ground of the doubtful phenomena already referred to. In a country where changes are so rapid and gigantic as, owing to its marvellous river system and its vast periodical floods, they are in the great plains of India, but little stress can be laid upon evidence derived

from the depths of deposits, or their embedded remains. This is decisively proved by James Ferguson, Esq., F.R.S., in an elaborate and most valuable paper on the recent changes in the delta of the Ganges. He shows that the data often alleged in proof of great antiquity is altogether fallacious. After describing the mode in which deltas are formed; --viz., "by a river flowing through some low part of the country, gradually embanking itself, and then raising its bed till the body of its water is higher than some neighbouring region; it then falls into this, and, going through the same process, it fills that depression, and then goes on to the next. After a long cycle of years, it comes back again to the country it first left, which probably has not risen one foot since, while the neighbouring country may have been raised thirty or forty feet;"—he proceeds to prove this.

He observes, "From these data it will be perceived how fallacious any conclusions must be which are drawn from borings in the strata of deltas, and calculations formed from local superficial deposits. I myself have seen the bricks, which formed the foundation of a house I had built, carried away, and strewed along the bottom of a river, at a depth of thirty or forty feet below the level of the country. Since then the river has passed on, and a new village now stands on the spot where my bungalow stood, but forty feet above its ruins; and any one who chooses to dig on the spot may find my 'reliquia' there, and form what theory he likes as to the antiquity of my age."

In like manner, from carefully observed and collected data, Mr. Ferguson proves the occurrence of many comparatively recent changes, for which, but for such data. a great antiquity might have been claimed. Rivers have shifted their beds several miles in the space of forty or fifty years; others have formed entirely new channels, or, bursting into smaller rivers, have, in a short time, deepened and widened their channels sufficiently to admit the flow of their waters. From other data he concludes "that hardly more than some four or five thousand years can have elapsed since the sea, or rather the tide, was at or near Rajmahal, beyond which the delta is now extended some two hundred miles." And if, since that period, the ground at Rajmahal has been raised some sixty feet by the accumulation of river deposits, then what must have been the thickness accumulated about Calcutta by the same agency, since the period that man first appeared on the earth some eight or nine thousand years ago! It will thus be seen that the great antiquity which Sir C. Lyell endeavours to establish for the deposits reached by borings, at depths of from three to four hundred feet, near Calcutta, rests on most uncertain data. If, through the delta-forming power of the Ganges, the sea has been made to recede some two hundred miles in the space of four or five thousand years, then, even only supposing the same rate of progress, how far would it be made to recede in the space of eight or nine thousand years! But to suppose the same rate of progress would be granting too much in the case. According to the calculations of Mr. Ferguson, the rate of progress would be much more rapid when the slope of the country was much greater. Then, too, the materials carried down would be coarser, and would more largely consist of gravel. Hence, the greater the depth reached, the more abundant would such coarser materials become.

Nor do we see in the case any necessity for slow submergence and re-elevation. If the sea was originally deep enough, and if the regions from which the materials for deposition were obtained were sufficiently lofty for the purpose, a delta—as is clearly shown by the examples given by Mr. Ferguson-of above four hundred feet in depth, might be formed at the mouth of such a river as the Ganges. Nor is this supposition inconsistent with the fact that all the organic remains found in the borings were of a fluviatile or terrestrial character. No marine remains might be found in the borings, which would include but a small space, and yet such remains might exist in the deposit. Such limited evidence at any rate cannot be regarded as very conclusive. Besides, the way in which the base of deltas is formed would lead us to expect that they would contain but few marine remains. The materials brought down by rivers, and especially such materials as pebbles and boulders, are thrown down near their mouths in planes more or less inclined, thus forcing the sea gradually to retreat. The finer materials, if not caught by tides and currents, and carried much farther out to sea, would be

spread over the bottom of the contiguous parts of the ocean. As a general rule, therefore, deltas will contain but few marine remains. In fact, the immense body of fresh water which large rivers are ever pouring into the sea, would of itself be sufficient to prevent the approach of marine animals, and would well account for the absence of their remains.

But whether this explanation be admitted or not, the data and calculations of Mr. Ferguson prove that no reliance, as to great age, can be placed on evidence derived from borings made in delta deposits.

We have not, however, referred to these Indian deposits for the purpose of basing any positive conclusion upon them, but to show that they can, at the best, be only regarded as doubtful and deceptive phenomena, and are thus no decided proofs of man's great antiquity.

Hence we cannot admit that the inferences of Dr. Falconer, respecting the deposits of the higher parts of the Ganges, are proved. We do not, in his paper on these deposits, find any evidence adduced to show that the inferior portion is of high antiquity. If, by these inferior portions, he means the stiff clay and shoals of "kankar," in the bed of the river Jumna, from which the persons employed by the Government to remove these impediments to navigation obtained the fossil bones of mammalia, then, in reference to these, Captain Smith, who was one of those persons, tells us "that the circumstance of the bones being dug from depths of six to eighteen inches in the fine shoal, is explicable on

the modern accretion of some of the kankar shoals above referred to, without involving a great antiquity to the fragments of burnt clay. Similar accretions are still being formed, often including portions of older kankar and modern objects cemented together; and no doubt some of the remains found in the older kankar, were, in like manner, obtained from still older deposits. And, therefore, contrary to another of Dr. Falconer's inferences, it does not appear from the evidence in the case, "that the fossil remains occurring in the undisturbed beds of kankar, at the bottom of the section, are of the same age as the deposits in which they occur." If the newer kankar enclosed portions obtained from the older, why should not the older in like manner enclose fossil bones washed out from some still more ancient formation. In a country where floods are periodical, and sweep so large an amount of detritus from the hills, and where rivers so frequently shift their channels, nothing seems more probable than that fossils should be washed out of previous formations, and that such fossils should be mixed with the deposits which the rivers themselves are forming.

Then, if our surmise as to the antediluvian character of these old river beds is correct, we should not expect to find any "indications of their being overlain by deposits resulting from marine submergence." But there is no proof that a deluge has not overflowed the country since their commencement. The old banks of kankar may partly owe their origin to that deluge, as well as

to the powerful river-action, which, in these upper parts of the Ganges plain, would prevail during the ante-diluvian period. Hence, we should not look for marine remains above, but somewhere beneath these old riverbeds, just as we should look for them beneath the "lateritic beds" of the Madras and Arcot district. That the plains of Hindoostan have been subject to movements of depression and upheaval during the progress of alluvial deposition, is very probable; and this may account for some phenomena difficult to explain, from the present configuration of the country.

We are convinced, therefore, that on the whole, India has yet yielded no evidence that is hostile to the antediluvian age of the deposits, for which so great an antiquity is claimed. They are evidently post-pliocene. They present similar conditions to the post-pliocene deposits of Europe and America. But for this link of connection with our European deposits, we should regard the Indian ones of very uncertain date. But it will not always be so. We fully share in the conviction, "that it is in the great alluvial valleys of India, and especially of the Nile," and we will add of Armenia and Babylon, etc., "where we may expect to find vestiges of man's earliest abode." Within the area of these regions exists the "cradle of the human race," where man first began to multiply, and from whence he would spread himself over the face of the earth. But we have no expectation that, when found, these "vestiges" will prove "that the earliest date to which man has been traced up in

Europe, is probably but as yesterday in comparison with the epoch at which he made his appearance in more favoured regions." This is mere fancy.

When we reflect, indeed, on the facts that all the shells and many of the mammalian remains belong to existing species, and also that the stone implements closely resemble those found in Europe and America; and further, that the few remains of man himself already found in India and in the valley of the Nile, do not appear to be at all more ancient than those found in Western Europe,—we cannot but regard such sentiments as mere wild speculation, for which there is not the slightest proof. Doubtless, when, in the countries in question, a proper and enlightened search is made for them, remains of our antediluvian forefathers will be discovered; but the only result we anticipate from them is a confirmation of our Biblical deductions, that the Divinely formed man, the progenitor of all the nations of mankind, was brought on the earth at a period from eight to ten thousand years ago.

SECTION II.

RECENT GEOLOGICAL CHANGES.

Changes in India.—In France and England.—Raised beaches in Cornwall.—Changes not slow.—The effects of such changes.—Floods.—Changes of the Nile valley.—Danish peat-mosses.—Ancient Swiss lake-dwellings.—Of Ireland.—No great stress can be laid on the thickness of peat-mosses.

As we have just seen, recent geological changes have occurred, and are still occurring, in India and the valley of the Nile. Europe and America furnish similar examples. Rivers have changed their beds, deltas have been formed or greatly extended, and the present dry lands have had their periods of depression and elevation.

Mr. Ferguson mentions a case where a small creek, called Ellan Khalee, being seized upon by an invasion of the waters of the Bramahpootra, was, in the short space of twelve years, converted from a small stream which could be easily leaped on horseback, into a river eight hundred yards wide, and so deep that it was open to steam navigation between Calcutta and the upper provinces all the year round. Other changes,—such as the upheaval of the Madoopore jungle, the bursting of the river Damooda into an old channel of the Bhagorutter and joining the river Hoogly, the alteration in

the course of the river Teesta, and many kindred phenomena,—are mentioned as having occurred in recent times.

Northern Europe, the British Isles, France and Germany, the shores of the Mediterranean, and the coast of South America, all afford clear evidence both of submergence and upheaval. Our submerged forests and peat-beds, and our raised beaches, furnish conclusive evidence that during the human period the land has at one time stood considerably higher than it does now, and at another time from fifteen to thirty feet lower. In the Lizard district, in Cornwall, we have seen raised beaches as much as forty feet above the present highwater mark. Then, according to Mr. Geikie and others. similar elevations have occurred around the Frith of Forth, at the mouth of the Tay, and along the eastern coast of Scotland, some of which Mr. Geikie endeavours to prove have taken place since the Roman occupation of this country.

But it is enough for our purpose if it can be shown that all these changes have probably occurred within a period of six thousand years. Or which, in our view, is tantamount to this, that they have all occurred since the deposition of the oldest formations containing the remains of man. And even supposing that those who claim for the latest of these changes a period since the Roman invasions of Britain are in error, and that all these changes were completed before the armies of Rome landed on our shores, yet still there would be

some four thousand years between that event and the biblical deluge: a space amply sufficient for all the changes in question to have occurred.

To assume that all these changes of level have been very slow, and therefore protracted, seems little better than begging the whole question. The rate of submergence and elevation unquestionably greatly varies in different localities and at different periods; hence, to conclude the elapse of immense periods of time, from any supposed uniform action of the submerging and upheaving forces, is to build upon a fallacy. As yet these forces are most imperfectly understood; and, therefore, to suppose that we know sufficient about them to warrant anything like a positive inference, as to the amount of time they would take to produce a certain amount of change, is to decide on most uncertain data. An earthquake, or some hidden volcanic action, as both recent examples and experience show, may elevate large areas of country in a few minutes. And why should not submergence, in some cases, occur as suddenly? Conclusions respecting man's great antiquity, based upon the supposed uniform slowness of these changes, are not deserving of any confidence. Such changes may often have been sudden; that they were all slow, there is no proof. In fact, we think that there is a good deal of proof to the contrary.

Thus, in many parts of the Lizard district already referred to, the raised beaches for the most part are composed of loose materials; and, therefore, had the coast risen slowly, at the rate of a few feet in a century. the waves, breaking as they do against this coast with fearful fury, must have swept all these loose materials away as the land was slowly rising. But, instead of thus sweeping them away, the sea has cut them back, and they often form a perpendicular cliff of from thirty to forty feet in height. If the upheaval of this coast was somewhat sudden, this is at once accounted for: but how such loose materials could escape destruction on a slowly-rising and storm-beaten coast, we confess ourselves unable to see. Other localities, of course, may furnish real or apparent exceptions. We do not suppose that all the examples were sudden. Nor need All we urge is, that there is no evidence of a uniformly slow depression and elevation; and that, looking at all the exceptions, we have ample ground to conclude that the changes of level were not all produced by the gradual operation of the forces to which such changes are owing.

In short, looking at all the circumstances involved, we should deem some four thousand years a period long enough to allow for the occurrence of all the changes which can be proved to have taken place since the cave and valley deposits containing the most ancient remains of man were completed. So far, indeed, as any opposing evidence is concerned, they may have taken place in a much less period of time; but we are satisfied to confine them within the limits assigned.

But these changes of level could not take place with-

out affecting the action of the sea on its coasts and in the lower parts of valleys, nor without modifying the action of rivers themselves. During the periods of greatest elevation, the rivers would possess the largest amount of power to scoop out and deepen their channels. carrying down the materials to their lower parts, while their mouths would encroach more and more on the Then, during the periods of submergence, the action of rivers would be more feeble; their streams, where they were not elevated much above the sea, would be dammed back by its waters, and might form extensive swamps, in which accumulations of peat might be rapidly formed, as, for example, in the valley of the Somme, in France, and in several river valleys of the British Isles. These floods, such as have occurred within the historic period, doubtless also occurred during these former periods of depression, and would still further modify and complicate the phenomena of these river-valleys, and make it more difficult to ascertain their probable date.

Take, for example, the deposits in the valley of the Somme. When the land was some forty feet lower than it is now, its so-called lower-level gravels, and some of its upper ones, would necessarily be subjected to considerable changes. A flood, similar to those that have occurred in France within this last twenty years, taking place during this period of depression, would penetrate these loose materials, remove large portions of them, accumulate fresh deposits, mix and modify the character of older ones, tend, in places, to form mounds

of sand and gravel, and, by leaving their waters in swamps and hollows, greatly facilitate the growth of thick masses of peat.

Not that we assert that such floods have either scooped out the valley of the Somme, or that they have been the *origin* of the deposits containing the flint implements; but we do assert that such floods must have considerably modified and complicated these deposits, and made it more difficult to determine the period of their accumulation. Nor would such floods the less tend to modify the overlying loess. Where it was exposed to their action, it would be still further denuded; sections of it, that reached above the level of such floods, would be deepened by the scooping power of the water; while, in more level and favourable localities, new depositions of sand and loam would take place, thus adding to the thickness of the loess beneath.

Hence, when speculating on the age of these valley deposits, all these, and many similar facts ought to be taken into consideration.

CHANGES IN THE VALLEY OF THE NILE.

The attempts made to obtain evidence of man's antiquity from borings and pits sunk in the valley of the Nile, are little better than a complete failure. We have already seen that data obtained from borings in alluvial plains and over the deltas of rivers, in which some supposed rate of deposition must be assumed as the measure of time, are altogether fallacious. Not only must the

rate of deposition greatly vary in different seasons and localities, but, as we have seen from the examples in the plains of India, rivers often change their channels, forming for themselves new beds, as old ones are silted up, and in some cases throwing down deposits of forty feet in thickness in a few years. Sir C. Lyell himself has evidently no confidence in the results of the expensive experiments made. They would not, indeed, warrant us to go so far back as our own biblical deductions would. Hence, so far as Egypt, one of the oldest inhabited countries, is concerned, we have yet no evidence of a greater antiquity than the one which we have deduced from the biblical record itself.

Nor do the Danish peat-mosses and shell-mounds "according to the estimate of Steenstrup and other good authorities," carry us back more than four thousand years. And if there is "nothing in the observed rate of the growth of peat, opposed to the conclusion that the number of centuries may not have been four times as great," so, on the contrary, there is nothing to prove that the period may not have been much less. Such conjectures, in fact, can prove nothing, and ought to have no place in an inquiry in which it is sought to prove an antiquity for man which no biblical deduction can warrant. Not that we object to the number of years assigned by the persons most competent to give an opinion in the matter; we mean the careful explorers of these mounds and peat-mosses. Had they even assigned some seven or eight thousand years for the oldest human implements and skulls, this would only have corresponded to the antediluvian period of the Bible; and, in that case, the ancient race, to whom these skulls belong, supposed to have been of small stature, and to have had round heads and overhanging eyebrows, may have been one of the antediluvian tribes. If it were so, the Scotch fir-tree may have formed the distinguishing flora of the antediluvian period, and may,—as immense forests appear to have been in England,—have been overwhelmed by the deluge, and, with their foliage and trunks, have assisted in increasing the accumulations of peat.

The bronze and iron period of these Danish mounds and mosses, and the corresponding oak and beech ones, with the larger and more elongated human skulls, belong, in all probability, to the post-diluvian epoch. On these points we have no wish to decide. Enough for our purpose, that all the facts, as far as they can be explained, fall into a period long posterior to the date of the Adamic creation.

ANCIENT SWISS LAKE-DWELLINGS.

It may interest some of our readers if we transcribe a brief description of these ancient habitations of man. "The earliest historical account of such habitations is that given by Herodotus, of a Thracian tribe who dwelt, in the year B.C. 520, in Prasias, a small mountain lake of Pœonia, now part of modern Roumelia.

"Their habitations were constructed on platforms

raised above the lake, and resting on piles. They were connected with the shore by a narrow causeway of similar formation. Such platforms must have been of considerable extent, for the Pœonians lived there with their families and horses. Their food consisted largely of fish, which the lake produced in abundance."

Such habitations were constructed in the Swiss lakes. Remains of them have been discovered in the lakes of Geneva, Zurich, Bienne, Constance, Neufchatel, and several others. Some of them are evidently comparatively recent, and none of them would appear to be older than the Danish peat-mosses. Hence they all fall within a period of four thousand years back. Probably this is greatly too much. The stone period, for example, may not cover one thousand years, the bronze period much less, and the Roman one some eighteen centuries. The longest date assumed for the most ancient of these remains is from five to seven thousand years, which may be greatly too much. At any rate, we could only venture most doubtfully to refer the oldest of them to the antediluvian period of the world's history. Most likely the whole of them are post-diluvian.

THE LAKE-DWELLINGS OF IRELAND.

The analogous remains found in the lakes of Ireland would seem to be of still more recent date. They consist of artificial islands. No great antiquity can be claimed for them, and yet they embrace the age of stone, and furnish flint arrow-heads, and chisels, and stone

axes, thus still further proving that the so-called stone age is not any proof of real but only of relative date. It does not prove positive antiquity, but only that in any given neighbourhood, a period of stone implements preceded one of bronze, and that a bronze period preceded one of iron. Such remains neither prove the precise date, nor the length of each epoch. Hence the mere presence of rude implements is no evidence of great antiquity. Unless, therefore, we are carefully on our guard, the terms, stone, bronze, and iron period, may greatly mislead us when we are attempting to ascertain the positive date of some past event. It is clear from the evidence, that the stone period of one region may, in real date, correspond to the bronze, and even to the iron period of another region. And, from such considerations it will necessarily follow, that conclusions based on such data must ever be uncertain.

Then these Irish lake-dwellings further prove that no great stress can be laid on the great thickness of overlying peat-mosses. This Sir C. Lyell admits; and yet the admission is practically cancelled by his remarks on the long periods, which, he urges, it must have taken to form the mass of peat overlying the fossiliferous gravels in the valley of the Somme. "The vast quantity of the bones of oxen, swine, deer, goats, sheep, dogs, foxes, horses, and asses found among the mud or earth that filled up the compartments of one of the lake-dwellings, were discovered beneath sixteen feet of bog." The presence of these domestic animals proves

this lake-dwelling to be comparatively recent, and yet it was covered by peat to a depth of sixteen feet. Additional examples of recent changes are given in Sir C. Lyell's work; but as they are substantially of the same character as the preceding, we need not swell this work by a review of them.

SECTION III.

THE THEORIES OFFERED IN EXPLANATION OF THE MODE
IN WHICH THE FOSSILIFEROUS GRAVELS OF RIVER
VALLEYS HAVE BEEN FORMED, AND OF THE AGENCY
BY WHICH SUCH DEPOSITS HAVE BEEN SUBSEQUENTLY DENUDED, AND THE VALLEYS SCOOPED
OUT AND DEEPENED.

Great differences of opinion among geologists respecting valley deposits.

—These not satisfactory.—Examples of difficulty.—Thame.—Near Welsbourne. — Stow-on-the-Wold. — Shipston-on-Stour. — Valleys formed by different agencies.—Examples.—Great names arrayed on different sides.—Absence of marine shells.—No proof of the absence of marine denudation.—Sir R. Murchison's theory the most probable.—Conclusions of geologists startling.—The origin and antiquity of fossiliferous cave deposits.—Theories of explanation unsatisfactory.—Loess deposit.—Deserves special notice.—Theories of explanation.—Great changes supposed.—Where is the proof of them?—Difficulties besetting the theories.—Sir C. Lyell's.—Mr. Prestwitch.—A flood origin admitted.—Objections to the floods contended for, etc., etc.

THE great difference in opinion which obtains amongst eminent geologists, respecting the mode in which valleys have been formed, in which the deposits of sand and gravel which they contain, have been thrown down, and respecting the agents by which such deposits have again been denuded or wholly swept away,—not only proves that the data on which each party seeks to base his conclusions is very complicated, but it also proves that, viewed from different "stand-points," that data is greatly conflicting. What is wanted is, some theory, or mode of solution, that will harmoniously reconcile all the apparently conflicting evidence. Such a theory is yet wanting. The theories now maintained, we think, utterly fail to account for all the phenomena which our valley deposits present.

Nor is this all. There are examples of fossiliferous deposits in plains and valleys, at considerable heights above and far away from our present rivers; and to suppose that these were thrown down by river-action, assisted by floods, is to suppose, that in these older times the rivers were many miles in breadth, and, of course, of corresponding volume. But whence could such rivers proceed, and how could such immense bodies of water be obtained? These are difficulties which will often obtrude themselves upon us, while endeavouring candidly to review the theories which are now most zealously advocated.

For example, the mammalian remains found in the railway cutting near the town of Thame, in Oxfordshire, a description of which was read to the fellows of the Geological Society of London, by T. Codrington, Esq., F.G.S., could not owe their deposition to the waters of the Thames, nor to those of the small stream contiguous to the spot. I saw and examined the locality, and am persuaded that the deposit is in some old river channel. Or, as Mr. Codrington expresses it, "a silted-up river."

The biblical deluge would doubtless produce many such examples. The old channels, which were higher than the surrounding country, would be wholly or in part filled up by the debris of the deluge; and hence, after the subsidence of its waters, and perhaps towards the close of that subsidence, those waters would cut for themselves new channels, leaving the old ones silted up.

Two or three other examples may be named. Some years ago I obtained fragments of fossil wood, apparently of oak, and a few bones and two front teeth of the great ox, the Bos primigenius from a gravel-pit near Welsbourne, in Warwickshire, at a depth of some fourteen feet beneath the surface. The wood was well petrified, but the bones were quite porous and very To suppose that the deposit containing these remains was thrown down by river-action, would require the Avon, which is the nearest river, to have, a little below the town of Warwick, a breadth of several miles. But that a river of such dimensions has ever flowed through this region since it received its present configuration, there is not the shadow of proof. And are we, merely to meet our difficulties, warranted to summon such a river into existence?

Another of the examples referred to was that of a premolar tooth of the Rhinosceros trichorinus, which I obtained from a deposit of gravel overlying the middle lias, near Stow-on-the-Wold, Gloucestershire. It was found about twelve feet beneath the surface, and shows little or no trace of rolling. In the neighbourhood

there are none but comparatively small streams, most of which, like the "seven springs" near Slaughter, have their origin only a few miles from the spot where the tooth was found. How were these gravels deposited? No river-action can possibly account for their accumu-Then the gravel must be much more ancient than the tooth which it contained. Its materials are well water-worn, and greatly resemble the gravels overlying the lias and new red sandstone in the neighbourhood of Stratford-upon-Avon, from which it is distant some twenty-three miles. It must, therefore, have undergone considerable transport. It is evidently an old gravel, perhaps of the drift, or some older period, and has wholly, or in part, been redeposited by some water-action, or how could the tooth of the rhinoceros have been so deeply imbedded in it. But no mere river-action, assisted by local floods, could have thus redeposited it.

Two localities near Shipston-on-Stour have furnished similar examples. Mammalian remains have been obtained from a brickyard on a considerable elevation, some three-quarters of a mile from the little river Stour. The lias clay is there overlain by about six feet of gravel, and the bones, for the most part, are found at the bottom of the gravel deposit, and lying on the surface of the clay. The other locality was a field in the neighbourhood, from which, when draining it, the proprietor obtained nearly all the vertebræ of some large animal, probably of the Bos primigenius. Now both these

localities are a considerable distance from the little river Stour, and the former of them elevated a good height above it; and, looking at the present configuration of the region about Shipston, we cannot conceive it possible for these deposits to have been produced by any action of that river. For it to have produced them, an immense physical change and some most unlikely conditions must be supposed.

And, doubtless, many other localities would furnish similar difficult examples. But these suffice to show that the theory which attributes the formation of the fossiliferous deposits in our valleys, and the subsequent scooping out of those valleys, to river action only, is greatly at fault, and must admit of very many exceptions, exceptions sufficiently numerous to disprove the rule. The probability is, that the valleys are unspeakably more ancient than are the deposits of gravel spread over them, and found on the sides and tops of the hills flanking them; and have been formed not in one, but at several periods; and not by one, but by all the denuding agencies to which they have been attributed. Their origin is partly marine, partly cataclysmic, and, doubtless, partly fluviatile.

Looking at the mode in which the ocean cuts back valleys in soft materials on its coasts, giving rise to an incipient system of future drainage; and at the way in which its waters rush through shallow and narrow channels between islands, driving the loose materials lying on their beds backward and forward as the current

changes its direction with the ebb and flow of the tide, and forming an incessant grinding action, distinctly heard as you cross over such channels, as the author has often done, in the little Shetland boats,—looking at all this, we cannot for a moment doubt that the sea has played an important part in forming the river and other valleys of the world. To deny this, is to ignore thousands of facts which may be easily observed all around our own coasts.

Who, for example, can for a moment imagine that the many deep, and nearly parallel valleys, crossing the South Wales coal basin, all owe their origin to river or mere elemental action. Whatever may be the origin of these remarkable valleys, it certainly is not fluviatile. Hence Mr. Prestwitch himself remarks, "I could never admit the possibility of river-action, as it now exists, having in any length of time excavated the present valleys and spread out the old alluvia; neither was it possible to admit pure cataclysmic action in cases where the evidence of contemporaneous old land surfaces and fluviatile beds were so common." He is thus decidedly opposed to those geologists who attribute the scooping out of our present valleys to river and elemental action only. But is not his own solution equally unsatisfactory? "But with river-action of greater intensity, and periodical floods imparting a torrential character to the rivers, the consequences of the joint operation are obtained, and the phenomena admit of more ready explanation."

But in the limited areas within which he would con-

fine such torrential rivers, where will he obtain the necessary amount of water to form such floods? There is nothing to warrant the supposition of their occurrence. This greater intensity of river-action and these periodical floods in such limited areas are, on natural principles, a physical in possibility, and can only be called in to meet what was otherwise felt to be an insuperable difficulty.

These views are said to have been based on a careful examination of a large number of river-valleys, both in England and in France, where flint implements have been found in beds of undisturbed fluviatile gravel. "The testimony afforded by the lithological examination of the valley-gravels amounts to this, that all the materials of which they are formed can be referred to rocks, or to older drift deposits traversed by the valleys or their tributaries; and that in no instance can the direct introduction of foreign elements be proved. The necessary deduction is, that the transporting agent by which the mass of materials composing the gravel has been brought to its present position, must have been, in each case, limited in its operation to the same hydrographical basins as those drained by the present rivers."

But if all this be admitted, How does it supply Mr. Prestwitch with his intensified river-action and periodical floods? We are at an utter loss to see. We are aware, of course, that such a conjoint phenomena is necessary for Mr. Prestwitch's theory, but the above facts are no proof of its actual existence. We should

rather regard the fact of limited area as in direct disproof of his theory. Imagined phenomena may be convenient things for solution, but the solutions thus obtained, when they lead to astounding claims of antiquity, must be shown in their proper light.

Nor do we see much stronger evidence in support of Mr. Prestwitch's distinction between low and high level gravels. This distinction may be well enough for indicating position and height above the present rivers; but, as we shall see, they afford no decided proof of difference of age. Hence, it is acknowledged that it is not possible to draw an exact line of demarcation between them, as the one sometimes insensibly shades into the other. What proof is there, then, that a long period of time elapsed between their deposition? Mere difference of height cannot prove this. And then, if the high-level gravels are due to river-action, it follows that limited areas of drainage have supplied rivers miles in breadth, and covering large spaces of country. What changes would be required to produce this state of things! Nor does "the presence of fluviatile shells abundantly prove that these gravels were deposited by riveraction alone," nor "their elevation that the valleys have been excavated since their deposition." To prove this, intensified river-action and periodical floods have first to be assumed, and rivers of miles in width must be supposed to have existed in our present hydrographical It is clear from the descriptions of them that basins. both the high and low level gravels bear the same character, and that they mainly owe their present form to one cause. The few apparently exceptional cases can be accounted for without invoking the long period supposed. The large boulders said to distinguish the high-level gravels, are also, though in smaller numbers, found in the low-level ones. There remains, therefore, as the only real difference, the *general* absence, in the low-level gravels, of the contortions found in the upper ones, and the more uniform bedding, and the greater abundance of beds of sand and fine gravel, with oblique lamination, which distinguish the former. But if both sets are owing to analogous causes, how should they thus differ?

Then there is another difficulty that strikes us. If the upper-level gravels occupy the flanks of hills as well as their tops, meeting and insensibly passing into the lower-level ones, how can the valleys in which they are found have been excavated since their deposition? The excavating power, at any rate, must have ceased ever since the deposition of the lower-level gravels, and of much of the upper ones. But we are told the contrary. Did then these deposits conveniently suspend themselves over the localities where they are now found, ready, when the work of excavation was accomplished, to be let down again on their present beds. Something of this kind must be supposed if the facts are as stated.

Then the attempt to prove a change of climate we think as signally fails. To account for the large boulders found in the gravels, and to obtain sufficiently large bodies of water to form his torrential rivers, Mr-Prestwitch calls to his aid a somewhat severer climate than the present one, and a more severe one for the upper than for the low-level gravel period. But the effort to prove this from the flora and fauna of these gravel deposits breaks down. Granted that many of the shells found in them are now found in more northern latitudes, yet one of them, the Cyrena fluminalis, is now found as far south as the Nile, in Egypt, and if some of the mammalia indicate a colder, others indicate a warmer climate. Looking, therefore, at all the facts of the case, the balance in favour of a colder climate is so small that no satisfactory conclusion can be based upon it. We do not deny a colder climate, but in the phenomena alleged in evidence we see no proof of it.

Nor does such a colder climate follow from the fact that these gravel deposits are newer than the boulder clay. The presence of recent marine shells in many localities, both in Europe and America, and at high altitudes, clearly proves that the glacial period was followed by one of submergence, and this may have continued until at the end the climate may have nearly corresponded with the present one. In fact, in Mr. Prestwitch's theory, so large an amount of data, of the existence of which there is no proof, has to be assumed, such as a severe winter cold, ground ice, immense torrents in limited areas, the transport of large blocks of stone, and the sudden melting of ice and snow, that we feel compelled to reject the theory which requires to

call to its aid such doubtful allies. We fully, however, concur with Mr. Prestwitch in referring some of the high-level gravels to a period before the country was inhabited. Some of the gravels, no doubt, are of great antiquity, but not so their present form of deposition. The depositing agent, whatever it might be, found much of the materials ready for its hand.

In closing our remarks on Mr. Prestwitch's papers, we freely confess that we admire the caution shown in his concluding observations; but still, and we would say it with the utmost respect for one so distinguished in the ranks of science, we cannot but feel that he has failed to assign a satisfactory cause for the deposition of our valley gravels, and has also failed to prove, for the human remains found in them, a greater antiquity than is warranted by our biblical deductions.

Nor have others succeeded any better than Mr. Prestwitch. We might, indeed, leave the question altogether until geologists themselves have come to a greater uniformity of opinion upon it. When such names as Scroope, Martin, Hopkins, Sir C. Lyell, Sir R. Murchison, Jukes, Ramsey, and others are arrayed on different sides, and are found upholding opposing theories, we apprehend there is grave reason to hesitate in forming a conclusion. Our own opinion is, that they are all partly right, and all partly wrong. We believe this for the following reasons: We cannot for a moment suppose that any of these eminent geologists would embrace and advocate a theory for which there is no evi-

dence. There must be facts suggesting a marine origin. volcanic action, earthquakes, and diluvial currents, something like powerful river-action, and atmospheric influence. Here, therefore, all are partly right. But if so, then all are partly wrong. The error, in each case. consists in assigning but one general cause for a varied, and evidently conflicting, phenomena. If ever a solution is arrived at, it will doubtless be by uniting in one comprehensive theory all that is most probable in each of the opposing ones. Whether this will ever be done, time and enlightened endeavour alone can prove. Perhaps the problem is too difficult for human intelligence to solve. But, if ever solved, the solution will be somewhere in the direction indicated. All the causes assigned have done their part in producing the present state of things; but they have so modified the results of each other's action, and so blended those results, that their separate action can be asserted and denied at one and the same time.

As to the alleged absence of marine shells, and other kindred objections, when examples of denudation are in question, they seem altogether out of place. If the question was one of deposition, such objections might be valid. But what have they to do with the denudation and scooping out of our valleys? An agent could not, in the same place, both denude and deposit; but different agents could and would produce different effects.

The theory of Sir R. I. Murchison, combined with a

portion of all the other theories, would be the most rational, and would the best accord with the conflicting data of the problem. In a paper "On the Drift of the South of England," he describes, with his accustomed care and sagacity, the drift of the Wealdon area, and considers it to be owing to great rushes of water, which mingled the debris of the various beds into the present drift deposits, burying the remains of mammalia. This took place when the country had, to a large extent, assumed its present form; and here, doubtless, is the germ of the true solution.

As to the dogmatic assertions, which would require us to believe that large areas have been denuded to a depth of two hundred feet since the high-level gravels were deposited, they are surely theories ridden to death, and must soon create reaction in the minds of all soher geologists. We would simply ask the authors of such theories, Where, when the rivers were running three or four hundred feet higher than they do now, do you obtain your broad streams and corroding torrents? are supplied by drainage from higher lands; but, in the south of England, what amount of land would there be above the height of three or four hundred feet? Could such limited areas, as would then be left, supply the necessary amount of water for the purpose of these floods? When authors ascribe effects to a certain cause, they should, at least, be prepared to show that such a cause could exist. Let me, at my will and pleasure, summon causes into existence, and what difficulties could not be

solved? But this would not be calm, scientific inquiry, but sheer speculation. A colder climate merely will not give the requisite data.

Then it will not do to invoke the aid of higher lands than exist now, to supply the necessary area of drainage; for if the hills had been denuded in proportion to the valleys, the deposits of gravel on their sides must long since have perished. There is thus no adequate cause to which the wide and torrential rivers can be ascribed; and we strongly suspect that no such rivers have existed, except in the imagination of the authors, since the gravels in question were deposited.

Their conclusions, did they rest on even probable data, would be truly startling. That man, and some of the present species of animals, have been on the earth during "a period analogous to the distance of a halfresolved nebula, or so vast, that if it were possible to express it in figures, the mind would refuse to grasp its immensity," is simply preposterous, and will, we imagine, have but few believers even amongst the fast-going geologists themselves. We feel assured, à priori, that a theory leading to such conclusions is false. "In the present state of the inquiry, to count," as such speculations would require us to do, "man's existence on the earth by hundreds of thousands of years, is unsafe and premature." To do so is very far from the modesty of a truly scientific spirit, and strongly savours of the spirit of reckless assertion. Why this rage to attribute confessedly conflicting phenomena to the operation of one agency? Is any person prepared to deny marine action in all the periods during which our valleys were being formed? No more than others are in a position to deny the action of floods, and the effects of atmospheric influence. The results, as we now see them, are due to all these forces, modifying and blending those results, until they form a problem most difficult to solve, and which, if attempted to be solved on partial data, must lead to utterly false conclusions.

We would not be presumptuous, but we cannot but feel that the theories by which it has been attempted to account for the phenomena presented by our valley deposits, in which the remains of man and extinct animals have been found, are extremely unsatisfactory.

THE ORIGIN AND ANTIQUITY OF FOSSILIFEROUS CAVE DEPOSITS.

As will be seen from our remarks respecting them in the preceding chapter, we regard the theories held concerning the fossiliferous deposits of the caves and fissures found in calcareous rocks, as equally unsatisfactory with those held respecting the like deposits in our valleys, and their supposed subsequent depudation by mere fluviatile agency. All these theories require a large amount of speculative data, and have to summon to their aid a variety of changes and forces, of the existence of which no decisive proof can be furnished. They require, for example, torrential floods of great extent and periodical occurrence, unequal depressions and elevations of the

land, a severer climate, and a host of other conditions, for which the proof offered is of a most dubious cha-But as we have already dwelt upon, and must, in the next section, again notice these cave deposits, we need not enlarge upon them now. None of the theories advocated will solve all the examples that have been examined. Like the gravel deposits in our valleys, and the examples of denudation which those valleys furnish, they have doubtless had a varied origin, and have been produced by different agents, and probably embrace a period of some three thousand years. Thus no one simple theory is applicable to all the cases. Some of them may have been inhabited by beasts of prev, and others by man. Or both may, at different periods, have occupied the same cave; but the majority of them have evidently. wholly or in part, been filled up, or have had their contents re-arranged, or greatly modified, by the action of water.

THE LOESS DEPOSIT.

The formation thus designated deserves a special and attentive consideration; and our inquiry would be very incomplete were this deposit overlooked. The loess is a very extensive deposit overlying many of our fossiliferous gravels; and is not only spread over large plains, such as the basins of the Mississippi, the Rhine, and the Danube, but it is also found capping hills of from three to eight hundred feet in height. It is a fine inundation mud, and has evidently been distributed over the countries where it is found by the action of water.

It varies in thickness, from a few to two or three hundred feet. Its more general thickness, as in Belgium, is from ten to thirty feet. Its general character is very similar, consisting of fine sedimentary matter, such as sand, clay, and lime. The shells that have been found in it are, for the most part, terrestrial and amphibious, and all belong to existing species. But shells of the genera Limnea, Planorbis, Paludina, and Cyclas, which require constantly to be in water, are also occasionally found in it. It has also yielded remains of elephant and rhinoceros.

To account for a deposit so wide in its extent, and so homogeneous in its character, various theories have been originated. It is, however, felt by the authors themselves, that all these theories are beset with difficulties. In one thing they seem to be all agreed, that these immense and extensive deposits of fine sandy loam have been thrown down by the action of water, and by the agency of large and wide-spread But how these floods themselves were occasioned, and how they deposited matter so similar in its character over many extensive plains, and on the tops as well on the sides of hills, are difficulties of a very grave nature, and for which various solutions have been offered. Were the deposit limited to a few river valleys, it might not be very difficult to account for it, for in that case it would be principally composed of matter obtained from the rocks flanking the river course. Deposits found in limited areas, and of local

formation, could not, in a great number of examples, be homogeneous in mineral character.

During the glacial period, a large amount of mud may have been prepared by the grinding power of glaciers; but where was this mud during the subsequent period, supposed to have been so long, in which all the extinct animals of the post-pliocene epoch and man existed, and in which our cave and valley deposits Had the loess formation been thrown took ·place? down at the close of the glacial era, we could then have understood, how the mud, which the glaciers had prepared, might have been deposited over the boulder clay. But, on the contrary, between the glacial period and the formation of the loess, an immense amount of time is supposed to have elapsed. In the meantime then, where was this supposed glacial mud? If the underlying gravels were also deposited by floods, would not such mud have been swept away by them? And even allowing, that by some means the glacial mud was kept in store, ready to be distributed after the fossiliferous gravel deposit was completed, yet how could such fine mud be obtained in sufficient quantity, and be transported sufficiently far from glacial regions, to be spread over a large part of every country? To cover regions so wide apart, and to spread, not only over plains, but on hills from one to eight hundred feet in height, a similar deposit, seems utterly impossible without the operation of some very general cause. No theories of ancient lake barriers, of depression and ele-

vation, or of rivers flowing at higher levels, will account for the general deposition of a formation so homogeneous in its mineral character as is the one in question. Insuperable difficulties beset them all; in all of them, indeed, the main facts have to be supposed. Thus, long periods of depression and elevation, and a series of most extensive inundations, have to be taken for granted, or they have to be assumed on utterly insufficient grounds. Then these depressions and elevations must be supposed conveniently to vary in different parts of the same area. "But we must suppose," says Sir C. Lyell, "that the amount of depression and re-elevation in the central region was considerably in excess of that experienced in the lower countries, or those nearer the sea, and that the rate of subsidence in the latter was never so considerable as to cause the submergence, or the admission of the sea into the interior of the continent, by the valleys of the principal rivers." Of course these depressions and elevations are all very obedient things; and can be summoned into existence, and can, at the pleasure of their conjurors, be made to produce just a certain amount of work.

But seriously, where is the proof of them? Where is the evidence of such changes? The fact that similar changes have occurred in Sweden, in recent times, is surely no proof that they occurred in the basins of the Rhine and Danube, and in a thousand other places during the deposition of the loess. The proper places to look for the changes is in the localities themselves.

But proof is a difficult thing; it is a much easier matter to assume and to take for granted.

We beg the reader to look at the assumptions in this case. First, an immense amount of prepared and reserved glacial mud must be supposed; then, unequal depressions and elevations of the land; next, a grand series of vast and extensive floods, to take up this mud and spread it out and over extensive areas; then, further, a re-elevation must take place; subsequently, another depression or two, to allow of the mud being deposited at different heights; and, lastly, a good deal of this mud must be swept away again, by the action of river floods. And yet, for all this, no direct proof is offered. We are to accept it all, because theory demands it all; then, on these assumptions, not only thousands, but tens of thousands of years are based.

And even granting, which we cannot without proof, that all these asumptions are correct, and that all these changes and inundations have occurred, yet we do not see how they could possibly account for the phenomena sought to be solved by them. The way in which the loess is deposited on the brows of hills and over extensive plains; the absence of gravel; the constant accompaniment of floods, in beds of many feet in thickness; the generally loose and unstratified character of the formation, and its existence, both in England and France, far away from any present rivers,—are a series of difficulties in the way of any solution by local and periodical floods which we cannot hope to see explained. Do great

floods deposit nothing but fine mud? and do they seek heights of several hundred feet on which to deposit their contents? Then had this deposit been owing to a succession of great floods, would not beds of gravel and of coarser materials have been several times interleaved between beds of silt? It could not be otherwise. Nothing, indeed, but the closest and most consistent proof could warrant us embracing a theory involving so many most serious difficulties. To demand our belief without such proof, is in the last degree unreasonable. If such are the best evidences of man's great antiquity that its most able and learned advocates can furnish, then the believer in the Bible has but little to fear from their speculations.

Nor is the more recent theory of Mr. Prestwitch beset with fewer objections. He agrees with Sir C. Lyell in attributing the origin of the loess to river inundations, but objects to his theory, and draws different conclusions as to the mode and circumstances of its deposits.

"The greatest difficulty that has been felt in attempting to understand the spread of the loess in England and France, has been the great difference of the levels at which they are found, these often being from one hundred to three hundred feet above the present river courses—heights to which no river inundations could attain in the present valleys."

Hence, to account for the presence of the loess in these elevated situations, Mr. Prestwitch assumes that less deeply excavated valleys formerly existed in the present valley sites; and observes, that notwithstanding the extension of the loess over the loftier ground flanking the valleys, such areas appear to be always bounded by higher hills, forming a barrier restricting the limits of the floods. Mr. Prestwitch's opinion is, that like the high and low-level gravels, the loess is always connected with river valleys, and if, instead of starting at the present low levels, the ancient valleys be taken at a level of from one hundred to two hundred feet above the floors of the present valleys, the difference of level then of the upper deposits of the loess to be accounted for will be diminished to one hundred or one hundred and fifty feet—a difference still considerable: but, on the other hand, these extremes are not always attained. At all events, this brings the whole of the loess within the possible range of inundations of the old pleistocene rivers, at different periods, according to their age; the higher beds having been deposited by the overflowings in the earliest periods, and before the excavation of the present river valleys, the lower beds after the present vallevs had been formed, but while the old meteorological conditions still prevailed. These deposits of loess thus furnish a measure of the volume of water anciently brought down by the rivers during floods, and show how very far they exceeded their present representatives, and how great must have been their erosive action. "Flood deposits will always consist of shingle in river channels (sic), sand in sheltered places, fine silt over the area where the flood-waters repose." So thinks Mr.

Prestwitch. But facts speak otherwise. At the commencement, and during the early parts of great floods, large bodies, as well as shingle, are taken up by them, and are often carried far away from rivers, and are indiscriminately thrown down, often mixed with sand and mud; and then, when a flood begins to subside, deposits of mud are, more or less, thrown down over the whole area, except in the channels themselves, and, if the country be flat, even in these.

Then it seems to be forgotten that a long series of floods has been invoked, and a gradual excavation of the valleys supposed. Hence, since the oldest loess was deposited, many thousands of floods must have occurred; and, as each flood repeats the supposed phenomena, we ought to have the series of gravels and sands and silt repeated thousands of times over. It will not do to invoke great periodical floods, and then to suppose that only one great flood took place during the period that the river was at a certain level. If the valleys were so slowly excavated, many floods must have occurred during substantially the same level. And thus, even on the same heights, we must have had a long succession of similar deposits. But this is not pretended. As far as we are able to gather the opinions of the authors of these theories, they seem to suppose that only one grand inundation occurred during each change of level. Their theories thus clash with themselves, and hence cannot be true. For in the manner which involves these inconsistencies, Mr. Prestwitch

"considers the high and low-level gravels and loess of all the levels to have been formed."

"This flood-origin of the loess being admitted, it follows that, as that deposit is found at fifty to one hundred feet above the highest beds of gravel, the floods of these periods must have risen like those of the arctic regions, but even to a greater extent (fifty to one hundred feet) above their summer levels. The fluviatile shells found in the gravels and loess are stated to be identical."

Such is a brief epitome of Mr. Prestwitch's theory. Like that of Sir C. Lyell, it is, for the most part, clearly based on assumed facts. Would not floods reaching to a height above two hundred feet above our present valley floors, lay large portions of the southeastern part of England under water? and would not such floods, sweeping through the country at that height, and with a corresponding volume, carry everything before them to the ocean? And then, although there might possibly be some higher ground in the neighbourhood of each loess deposit, yet were such regions entirely surrounded with higher ground? Were there no depressions or transverse valleys through which the waters would escape? Even granting Mr. Prestwitch the floods which he invokes to his help, they will not account for the phenomena—the general and similar phenomena—which he seeks to solve by their aid. In fact, if the high and the low-level gravels and the loess all contain the same shells and the same animal remains, does it not clearly show that they all had the same origin, and were thrown down at the same time? Can it be fairly supposed that nearly the same conditions would continue, and the same periodical floods would occur, and the same species of shells and animals exist, over such wide areas, and through the enormously long periods of time as these theories assign for the scooping out of our valleys, ever since these deposits were completed? Then what would be the effect of periodical floods continued for one hundred thousand years?—to go no farther. Would not a hundred thousand torrential floods produce a much more stupendous and complicated state of things than that which is presented by the simple structure of the loess and gravel deposits? In comparing the supposed causes with the actual effects, they do not tally, but present a crowd of discrepancies. Nor can we conceive of any local agency that could produce the effects to be accounted for.

But we also feel compelled to demur to the supposed floods themselves. We have against them precisely the same objections as were urged against the supposed floods, to which the scooping out of our valleys and the deposition of their gravels are attributed. Whence could such floods proceed? How, within so limited an area of drainage, could we obtain water sufficient to fill valleys a hundred feet higher than our present ones, with rivers one hundred feet in depth? Imagine each spring a torrential river, flowing through the sites of the present river valleys of Europe and America, at a

height of two hundred feet above their present streams, and corresponding miles in breadth! To supply one such scene, the whole area of such countries would require to be covered with the ice and snow of many centuries, and the whole to be suddenly dissolved. Hence, do not such floods lack the very shadow of probability? And can all the eminent talent and scholarship of the authors of such theories save them from the charge of being the sheerest speculation? Suppose that on such slight grounds we maintained an opposite theory, should we not be met with contempt, and be taunted with our folly, and be requested to furnish our proof?

We are aware that the theories now held respecting the formation of the loess and gravel deposits require these floods to account for them. But of the existence of such floods there is no proof, nor could such floods occur under the conditions requisite to produce the observed effects. Thus, then, the authors of these theories have two most difficult tasks to accomplish; they must first prove the existence of these floods, and show how they could be obtained, and then they must show in what manner such floods could produce the effects ascribed to them. Until this is done, we shall feel compelled to withhold our assent, and to conclude that such theories lack both probability and adaptation.

SECTION IV.

THE BIBLICAL DELUGE FORMS THE MOST SATISFACTORY
SOLUTION OF ALL THE PHENOMENA PRESENTED BY
THE SUPERFICIAL DEPOSITS IN CAVES AND VALLEYS
CONTAINING THE REMAINS OF MAN AND OF THE
EXTINCT ANIMALS OF THE POST-PLIOCENE PERIOD.

The deluge taken in connection with the antediluvian period.—State of the earth at its beginning.—Glacial epoch.—This extensive.—Proofs.—Crousa Downs.—Granite districts, etc.—Submergence.—Upheaval supposed to be slow.—Proofs that it was sudden.—Older remains accounted for.—Man and the animal remains found with his own date after this period of upheaval.—The modifying influences of the antediluvian period.—Some of the deposits partly owing to this.—Still the flood alone can solve the phenomena.—This cause analogous to those embraced in other theories.—Effects of the deluge.—In caves.—Valley deposits.—Loess deposit.—The action of its retiring waters.—It solves the most perplexing phenomena.

In this inquiry, we do not regard the biblical deluge as an isolated fact—an event standing alone, but as consummating the antediluvian epoch, and as having had its effects modified and complicated by many local conditions. Then, in order properly to understand its effects, we must take into consideration the state of the earth at the beginning, and during the antediluvian period. That period, as is universally allowed, was preceded by

the glacial epoch, during which large portions of the globe were covered with immense bodies of ice and frozen snow. The land above the ocean was surmounted with enormous glaciers, which by their movements were grinding and grooving the underlying rocks, and were also producing large mounds of glacial debris called morains, and a large amount of glacial mud. How long this period of intense cold continued, and how far the effects extended, may be matters of dispute; but the settlement of such questions cannot affect our conclusions in the matter. Judging from the extent of the boulder clay, the deposit formed during the glacial period, and the great depth of many of its deposits, it must have been of considerable duration. It is sometimes hundreds of feet in thickness, containing many large boulders, often scratched and grooved in a similar way as are the underlying rocks. Its extent is probably much greater than is generally supposed.

There are, for example, singular mounds of gravel, and distributions of large unworn blocks of stone in England, as far south as the Lizard district, in Cornwall, that cannot well be accounted for but upon the supposition of ice and water-action. There are no rivers near to them. There is one such mound of gravel on Crousa Downs, near St. Keverne, Cornwall, lying in the midst of a district that is thickly strewed with large blocks of dialage rock, often of many tons in weight. The district over which the blocks are spread will be some three miles in breadth by five in length. Often the blocks

lie so near together that you can step from one to another. We do not profess to offer any minute solution of this example; but, in examining the district, as we often have done, we could see no possible explanation but ice or water-action, or the two combined. we failed to discover any decisive proof of scratching and grooving; but still, which way could the mass of gravel on the very brow of Crousa Downs, often more than thirty feet in depth, and the countless number of surrounding dialage blocks, be thrown down and scattered over the large area in question, except by the action of glaciers, or by large bodies of floating ice? The mother rock, from which these dialage blocks were doubtless obtained, stretches away from Coverack Cove along the present coast, about a mile, or a little more, from the mound of gravel, but we could never detect its presence The rock in situ is intersected with large veins of impure quartz, undistinguishable from that which forms the mound of gravel. That gravel, therefore, was most probably obtained from the breaking-up of the immense masses of dialage rock, the remains of which are still found on the present coast.

But how the materials thus obtained could be deposited on the brow of Crousa Downs, over an area some half-mile in length and some hundreds of yards in breadth; and how the surrounding region, than which there is no higher ground in the neighbourhood, became strewed with the immense number of blocks found lying upon it, or partially or wholly imbedded in

its fine red loam, is very difficult to determine; but ice and water-action forms the most probable explanation. Water-action, indeed, must be supposed, for some of the gravel is a good deal water-worn. Some few of the dialage blocks are imbedded in the gravel, some few lie on its surface, and others are found skirting it and lying on its edges.

Similar evidences of transport are found in almost every granite district. For distances more or less considerable, each granite knoll or ridge is surrounded with large blocks, which could only have been borne and scattered over the district by ice or water-action, or by both. In a small valley near Helston, blocks of granite of immense size have been thrown upon each other in a remarkable manner, giving proof of some powerful transporting force which no present circumstances of the locality could supply.

Nor are evidences of transporting action wanting in other districts. In some fields near the road leading from Moreton-in-the-Marsh to Shipston-on-Stour, there are some large gravel-pits which are worked for road material. In these the bulk of the gravel is composed of the same rolled materials as are the gravels in the neighbourhood of Stratford-on-Avon, and like these gravels, contains many specimens of the well-known lower lias shell, Gryphea incurva; but it also contains a great number of large, and for the most part, unrolled flints. Now it is certain that these flint masses could not owe their transport to river-action. There is not

now any river near to account for the deposit of gravel at all; not even for the portion obtained from the destruction of the lias beds containing the Gryphea. Then with regard to the chalk flints, river-action cannot be supposed, for the only rivers near-such as the little Evenlode—flow in the direction towards Oxford, which is just the opposite of that in which the flints must have come. The nearest point from which they could be obtained would be the neighbourhood of Wantage, and if derived thence, they must have been transported over all the high ground stretching from Long Compton, over Chipping Norton, toward Oxford. Riveraction, therefore, is out of question. Such cases can only be referred to the action of ice, or to such floods as no natural cause could have produced.

Then the presence of the unrolled flints in well-worn gravel could not be accounted for by river-action. These different materials must have been brought from two nearly opposite directions, and at the first have been transported by different agents. Probably the rolled portion of this gravel deposit is of ancient date; and it might become mixed with the chalk flints, either during the glacial epoch, or during the subsequent period of submergence, when masses of ice, breaking away from the chalk hills, carried the flints and scattered them over a region already covered with lias gravel, and which, by subsequent currents and movements, became mixed with that gravel.

But, in naming these examples, our object is not to

offer any formal solution of them, but to show that no mere river-action can account for them; and also to show that glaciers, or large bodies of ice, covered more extensive areas than is generally supposed; and that there were vast supplies of gravel in existence before the period during which our valley gravels were deposited.

Then that the glacial period was followed by one of submergence is equally clear. The marine shells, mostly of arctic species, found at great heights above the level of the sea, both in Europe and America, are unequivocal proofs of such submergence. For a detail of the facts we must refer the reader to the papers on the subject by Professor Ramsey, of Messrs. Jamieson and Geikie, Sir C. Lyell, and others. Then, according to Mr. Jamieson, the boulder clay is in several instances, in Scotland, overlain by a more recent deposit, for the most part unfossiliferous, and which has again been denuded in a manner that shows the action of large bodies of water rushing down from the higher regions during the process of upheaval. The writer has himself seen many similar unfossiliferous deposits on hills and sheltered places, which must once have covered the regions where they are now found; but which, like the examples given by Mr. Jamieson, have again been mostly swept away from the sides of hills by the action of the retiring waters.

It is, it is true, generally assumed that this process of upheaval was gradual, and that it has taken many

thousands of years to effect it. But where is the proof of this? And modified, as all the effects must have been since, can any one pretend that he is able to determine whether the upheaval was gradual or sudden? That there has been considerable upheaval since the deposition of the boulder clay and of the marine shells, is a fact undisputed by any one. But since that upheaval, even according to our biblical deductions, there has been the wear of the long antediluvian period of some three thousand years, the stupendous and complicated action of the deluge, and the effects of river and atmospheric action, and the operation of other modifying causes of the six thousand years which have probably elapsed since the deluge occurred. And who, after all these modifying influences, is competent to show by which process it was that the upheaval was effected?

Of course we shall be told, that, with few exceptions, upheavals are always gradual. But this only amounts to the fact that, with few exceptions, all modern upheavals have been gradual. There have been exceptions. Islands have been suddenly upheaved; the mountain in America, described by Humboldt, was so; and other examples of several feet of upheaval in a few minutes have occurred.

Then, as we remarked in reference to the raised beaches of Cornwall, would not a gradual upheaval have occasioned the destruction of all the superficial deposits within the reach of the waters? Tides and storms would have swept the whole away, even from behind

barriers, or have left the merest fragments of such loose deposits. But although a sudden upheaval of the land would cause the retiring waters to sweep away an immense amount of superficial material, and in many instances to remove it altogether from hill sides, they would leave it in depressions on the tops of hills, and behind barriers which stood between them and the ocean.

Thus even apart from Scripture testimony, to say the least, there is as much evidence in favour of a sudden as there is of a gradual upheaval. But if the statement of the inspired penman be admitted, the question is decided. On the third day of the present creation, the Almighty commanded, "Let the waters under the heaven be gathered together into one place, and let the dry land appear." Or, in the language of geology, let there be upheaval. Could admitted scientific fact, so far as upheaval alone is concerned, and biblical statement, more fully agree? Then with all candid minds, this clear biblical statement must decidedly turn the scale in favour of a sudden upheaval.

As to difficulties—unless they involve a contradiction, or an absolute impossibility, neither of which can be pretended in this case—we have already shown that, in cases where the Scriptures assert a direct Divine interposition, that all attempts to solve them by the operation of natural causes are out of place. The Bible describes the elevation as effected by God's direct command; and where Omnipotence works, difficulties are out of question.

To inquire how this was done, and to attempt to assign the causes of its production, is worse than useless. We are content to accept the solution of Scripture: the omnific utterance of Jehovah, "the power of God."

Our position then is this,—an upheaval of the submerged glacial world took place before the introduction of man, and of the present and extinct land fauna of the post-pliocene and recent period; for according to Dr. Falconer, the extinct animals, whose remains are found along with those of man, all date from after the glacial epoch. The Bible also informs us that, before such introduction, and in obedience to the immediate command of the Creator, a sudden upheaval of the dry land occurred; and as the geological and biblical upheaval so well correspond in circumstances and in point of relative time in regard to the introduction of man and of the post-pliocene and present land fauna, we cannot for a moment doubt the perfect identity of the two.

As to the existence of pliocene and miocene, and of eocene shells, in our present seas, we do not see any difficulty in it, and it is, moreover, just what we should expect to find. The prevalence of enormous glaciers and of intense cold, and subsequent submergence, would, for the most part destroy all land animals; but would not destroy all, though it might destroy many marine ones. Nor should we expect the destruction of all land plants. The seeds at least of such plants might, in favourable circumstances of entombment, be preserved for thousands of years, and might, after the up-

heaval of the land, be brought within the reach of the conditions necessary for germination, and spring up, mingling their forms with the plants and herbs, and fruit-trees yielding fruit after their kind, which sprung up from the renewed earth when the Divine command was given to it to bring forth grass and herb and fruit-tree, each after its kind.

Thus the presence of older marine shells in our present seas, and of land-plants, if any such are found among our present flora, so far from militating against our biblical conclusions, they are just the exceptions which we should expect to find, and which the Bible allows, if it does not clearly indicate, when it tells us "that the earth was without form, and void."

There is thus a wonderful agreement between the established geological facts, and the brief but graphic and profoundly correct statements of Holy Scripture; an agreement which can only be founded in reality, and which can only be accounted for by fully admitting the Divine inspiration of the biblical historian, Moses.

Such, then, is our clear starting-point, or the grand base line from which the human epoch dates. Nor have we the slightest expectation that any subsequent discoveries will ever render it necessary to place that line lower down in the series of past formations. The presence, in a more recent deposit of a few pre-glacial bones, should they ever be found in such deposit, would be easily accounted for by the action of the glacial period, and of subsequent submergence and upheaval, by which

such bones might be washed out of older formations. and, like the fossils of the lias and of other rocks, be mixed with more recent remains in superficial deposits by floods, and especially by the action of the deluge. At any rate, it will be time enough to consider such exceptional examples when geologists have discovered them; until then, and especially considering how many examples have been examined without finding them, we shall assume that man, and all the animals, whether extinct or recent, whose remains are found with his own, date since the period of the last grand upheaval, and that that upheaval was the biblical one. We admit, of course, that there may have been many partial oscillations of level since that grand period of upheaval. We are prepared to admit any well-established facts on the subject. although such changes of level will have modified limited phenomena, they will have produced no grand general effect, and do not, therefore, interfere with our general position.

In all probability the globe had, at that period, assumed its present general configuration. Subsequent depression and upheaval, and the action of rivers and floods, of rains and other denuding influences, must, in the course of some eight or nine thousand years, have somewhat considerably modified that configuration, deepening valleys, cutting back escarpments, and producing a more or less general denudation, and the biblical deluge would both increase and modify these effects; still, the general outline of hill and dale which we now have, in

all probability dates back to the commencement of the human epoch.

Then much of our present gravel, sand, and mud was doubtless in existence at the same period. It is preglacial as well as glacial; and may, in fact, have overlain the regions where it is now found, for immense periods of time. But then, it has been modified, or restratified or reassorted by the action of floods since its first deposition. Sir C. Lyell fully grants that the mud of the loess is principally of glacial origin. And why should not much of our gravel and sand, be not only of glacial but of more ancient origin? There is no proof that they all owe their origin to the human epoch.

Such pre-existing deposits might be considerably modified during the antediluvian period. During the lapse of some three thousand years, it is reasonable to suppose that our valleys, especially where composed of soft materials, would be deepened, and that considerable general denudation would take place. The rivers flowing through them might also occasionally be the scene of torrential floods. We have sometimes thought that the language of Scripture warrants the supposition, that, during the antediluvian period, the earth was the scene of large and destructive floods. The promise given to Noah, and the covenant so formally and solemnly made with him and all flesh upon the earth, are, at all events, rendered more significant, and seemed more fit and necessary to reassure Noah and his descendants against any future destructive flood, if we suppose that large

floods had occurred during the antediluvian epoch. If they feared a repetition of them in the new epoch, the Divine covenant was admirably adapted to allay their apprehensions.

But be this as it may, we can see no objection to the occurrence of floods; and such floods may have helped to scoop out our river valleys. We of course differ with geologists as to the magnitude of such floods, and as to the stupendous amount of denudation attributed to them: but still we see no reason to doubt the occurrence of large floods during the antediluvian epoch: and admit that such floods may have deepened our river valleys, and may have thrown down some of the deposits containing the remains of man and of extinct animals found in them. Many such floods may have occurred before the general deluge, and may have left the carcasses of animals and remains and implements of man in valleys and near river courses, which would be ready to be mixed with the debris of the next inundation, and all finally with the grand deposits of the Mosaic flood itself.

Then the same epoch may have witnessed several oscillations of level; and during these, through the action of floods, fossiliferous deposits of considerable thickness, may have been thrown down in favourable situations. If such processes could be supposed through the long antediluvian period, they would go far to account for the geological facts from which it is attempted to derive so great an antiquity for man. The effects of such

floods and changes of level, would, of course be greatly modified by the subsequent deluge, and by the operation of natural causes acting during the six or more thousand years that have elapsed since that deluge. And, in any attempted solution, all this ought to be taken into consideration.

We do not, therefore, attempt to refer all the cave and valley deposits containing the remains of man to the action of the deluge alone. We take, as our data, the effects of the glacial epoch, and of the subsequent submergence and upheaval, and of the operation of natural causes during the human period, and the miraculous biblical deluge; and in these we have an ample, and, we believe, satisfactory explanation of all the phenomena for which so startling an antiquity is now claimed.

But when we have attributed to the operation of natural causes the utmost that they are capable of producing, there will still be a large amount of phenomena connected with our superficial fossiliferous deposits, for which such causes cannot account. The *elevated* position of many of the gravels, the heights of many of the fossiliferous caves, and the wide extent and lofty sites of the loess,—these, and kindred phenomena, cannot be solved by the operation of natural causes without supposing most improbable, if not absolutely impossible conditions, and periods of lengthened duration of which there is no proof.

We must, therefore, seek some other cause. Nor

have we, like the advocates of the theories which we have reviewed, to summon such a cause into existence. And, even if we had, we should only be in the same position as are the advocates of man's great antiquity. They have to summon a long succession of torrential floods, and unequal depressions and elevations of the land to their aid. But we are in no such position. The cause which we seek is clearly announced to us in the Divine oracles, and is distinctly echoed by general national tradition. The cause we require is an assured historical fact. It is not an imaginary phenomena, the existence of which is assumed on the ground of doubtful and conflicting evidence; but it stands out on the sacred page, as a certain past event, and which has been engraven on the tablet of all national record.

Clearly announced biblical fact is our starting-point. Then there is in our favour this weighty additional fact, the cause which we accept is closely analogous to the ones which the authors of opposite views have to summon into existence. All the theories by which it has been attempted to explain the fossiliferous deposits in our caves and valleys, and the deposition of the loess, include the action of water, and the operation of torrential floods. The evidence of water-action, and of water-action immensely more energetic than any now experienced, is so evident, and is so necessary to account for the facts presented, that, in every attempted solution, such action is allowed a conspicuous part. Then, while the theories against which we contend, must suppose

what, on natural principles, are next to impossible conditions, and must further suppose that the causes supplied by these conditions, produced next to impossible effects, we are Divinely assured that the conditions which we require, actually existed. Hence, as one simple and grand solution of the complicated facts, the biblical deluge has an unspeakable advantage over all the theories of men. Of the existence of the conditions which they invoke, there is no decided proof; and, if they existed, they would not be equal to produce the effects attributed to them. But the biblical deluge is a recorded fact, a Divine announcement, handed down in a written revelation, and inscribed on the memory of nations, and, in addition, furnishes unspeakably the most satisfactory solution of the problem to be dealt with!

We therefore accept the biblical deluge as a fact, and shall now proceed to show that it furnishes adequate, if not a complete solution of all the deposits for which so ancient a date is claimed. We say adequate solution. More than this we can scarcely expect it to supply. It is so difficult to realize the exact condition of the globe at the period when the deluge occurred, to ascertain the character and position of its superficial deposits, and so difficult to determine all the changes of level that have taken place both before and since the deluge, and the connection and division of lands, and the amount of modification produced by the operation of natural causes during the six or seven thousand years that have passed away since the flood, that we cannot

expect to be able now to explain every fact, and to account for every apparent exception.

Hence, adequate solution is all that we can reasonably look for. The deluge supplies what other theories demand, immense volumes of water, torrential floods, and waters flowing at considerable heights above the highest of our valleys. It supplies a general cause for a very general phenomena. As we have already seen, "the breaking-up of all the fountains of the great deep," and forty days and forty nights of torrential rain, would effect an immense amount of denudation. In whatever mode the Divine Judge caused the waters of the great deep to discharge themselves on the earth, the effect would be on a stupendous scale. The rushing waters would remove or greatly modify all superficial deposits which stood in their course, and mingle them with the enormous amount of debris, which the unceasing and prolonged torrents of rain would denude from the hills and from the higher parts of plains and Then such powerful water-action would take up large blocks of stone, or wash them out of the underlying boulder clay, and, in many cases, mingle them with the gravels which would be swept about by the impetuous, and probably whirling action of the swelling and rising waters. The blocks of stone found in the gravels, and especially in the so-called high-level gravels, which are regarded as proofs of severer cold and of the action of ice, can thus be easily accounted for by the action of the waters of the deluge. Such a deluge as that which the Bible describes would be sure to leave large stones among its debris. Thus, no severe seasons are necessary to account for, and no periodical floods, caused by the melting of immense bodies of ice and snow, are requisite to explain, their existence in the gravel beds and along with the flint implements of man. Indeed, without them, the biblical flood would seem to lack a part of its physical evidence.

Then the effects of the biblical flood would be of a very complicated character. It is next to impossible to conceive how the manifold water-action which it supplied would complicate and modify its own effects. Those who have supposed that the deluge was one grand wave of inundation sweeping over the whole earth, must have very carelessly read their Bibles, or have greatly misunderstood them. The Bible does not give the slightest sanction to any such notion. The flood which it describes did not originate in one centre, nor flow from one point. We do not exactly know what is meant by the breaking up of the fountains of the great deep, but they were no doubt in every part of the earth, and they were all broken up; and would thus begin to cover the earth from all directions at once. Then the waters supplied by the torrential rains were equally general, descending, wherever the deluge prevailed, upon the whole earth; and these rain-waters, as they rushed down from all the higher grounds, would meet and mingle with the ascending waters supplied by the breaking-up of all the fountains of the great deep, causing mighty eddies, and

counter currents, and compelling each other to part with some of the materials which they held in suspension, and throwing down contorted beds of gravel, and, in some cases, especially where there were barriers or favourable situations, accumulating such material to great depths, and depositing them, time after time, so as to present a stratified appearance. The flood was local as well as general. The ascending fountains, and the descending torrents prevailed everywhere, causing on the whole scene embraced by the deluge, a simultaneous rising and swelling of the flood; and thus, while the effect would be general, the general effect would be more or less modified by local conditions.

The effects, again, would be further modified by the progress of the deluge. As the prevailing waters rose higher and higher, overtopping height after height, and surmounting barrier after barrier, the current, in each locality, would again and again be made to flow in contrary directions, still further complicating the diluvial phenomena, and depositing masses of gravel and implements of man and bones of animals, in positions which now seem marvellous and unaccountable. Further, the ascending waters of the great deep, and the descending torrential rain-floods would drive the masses of debris borne by each other together, throwing them down with great violence, and, by their immense force, press the meeting deposits upon each other, and, presenting an appearance as if they had been pressed and crushed by the action of large bodies of ice. Then, of course, during the deluge, these deposits would be thrown down at different heights, but without leaving any distinction of importance between them. They would, for example, contain, on the whole, the same land and fresh-water shells, the same bones of animals and implements of man, and would consist of gravels and sand and some coarser materials; but they would be modified by containing, for the most part, the animals and shells peculiar to each locality, and by being mostly composed of the materials which the rocks and pre-existing gravels of each locality supplied.

There would of course be some exceptions. cases, and especially in low localities at no great distance from the sea, as in the valley of the Somme, marine shells might be deposited. There might also be an exceptional fresh-water or land shell, and of shells of colder or warmer regions, brought together by the changing currents of the deluge, and deposited in spots far away from their native habitat. The same thing might also occur in regard to the bodies of animals. When inflated with gases, they might be floated to considerable distances; and fragments of them might be deposited in gravels and silt in places far removed from the countries where they originally roamed. Still on the whole, these cases would form the exception. As a general rule, the deposits would contain the remains supplied by each locality. And such is the actual fact. In the deposits in dispute, the shells and animals are mostly of local species.

The facts already described would also account for

the different modes in which caves and fissures have been filled up. Such currents of water, charged with sands and gravels, and carrying along with them bones of animals and implements and remains of man, and often skeletons or parts of skeletons, would rush into such caves and fissures, when not already filled, rearranging or reassorting the materials they contained, partially mixing them with those borne in by the flood, and thus depositing, in the same cave or fissure, a stranger heterogeneous assemblage than could ever be brought together by the operation of natural causes. Then, as before, the conditions of each locality would both modify the character of the deposits, and the mode of their deposition. In fact, to understand our cave deposits, we must take into consideration the whole phenomena of the antediluvian period; the circumstances of each locality as modifying the action of the diluvial waters; and the deluge itself, as modifying and consummating all previous superficial phenomena. this is done, I see no difficulty in the way of assigning all the fossil contents of our caves, older than the recent period, to the antediluvian epoch, and to the action of the deluge. No other solution is equally adequate, even were we to grant to its advocates the most unlikely conditions and causes which they are obliged to invoke to their aid. No mere floods or changes of level will account for all our cave deposits; but the biblical deluge, rising on every side at once, yet mainly charged with local materials, will as fully account for them as we could expect any solution to account for phenomena so ancient in its origin.

Nor will the manifold action of the deluge, the less satisfactorily account for the deposition of our valley gravels, such deposits would be thrown down by it in places where no river floods could throw them down. The examples which we have already named as occurring at Welsbourne, at Stow-on-the-Wold, at Shipston-on-Stour, and near Moreton-in-the-Marsh, could never owe their origin to river-action. At all events, the biblical deluge is their best solution. It will fully account for the facts, that although they are on so many different heights, yet they contain the same fossil remains, and have the same general character. It will also explain the reason why there is generally but one bed of gravel. Exceptions of course would occur. The varying effects of the deluge might, in some cases, occasion a repetition of similar beds; but as a general rule, the gravels and man's implements and bones of animals, taken up or borne along by the waters, would be deposited the first; and would, in valleys and plains, as well as in more elevated situations, be deposited over large areas, and often in immense masses. Then older superficial gravels, not entirely swept away, would be modified, and would be so moistened and lightened that heavy bodies resting on their surface would sink into, and even through them, and would, as they are found to do, rest on the surface of the underlying rock or clav.

In this way, patches of gravel containing the remains of man and of extinct animals, might be left in various situations, exhibiting signs of stratification, and appearing to be undisturbed.

Then it is necessary to bear in mind that the latter action of the deluge would destroy or greatly modify its own earlier effects. In the first instance, while the ascending waters would tend to scoop out the lower parts of valleys, the descending rain torrents would sweep an immense amount of material into the valleys. and might, when the diluvial waters had risen sufficiently to prevent such material from being swept down the valleys, in a great measure fill them up by the two bodies of water compelling each other, somewhat in the way described by Mr. Ferguson, to part with and to deposit the matter which each held in suspension. In this way, as in the case near Thame, already referred to, river valleys, or portions of them, may have been filled up and obliterated. But for the most part the valleys thus filled up with the loose debris of the deluge would doubtless be partly or wholly scooped out again by the action of its subsiding waters.

But before describing these effects, we must test the diluvial theory which we advocate, by an application of it to the loess deposit. This, as we have already seen, overlies the deposits of gravel containing the remains of man. Then it is not only found overlying the gravels in our valleys, but it is also spread over extensive basins, on considerable heights, and is found capping hills.

According to the descriptions of Sir C. Lyell, it is often of great thickness, being piled up against barriers, and near river courses, to many feet in depth. Now the question is, Will the biblical deluge also account for this remarkable deposit, and for the land and fluviatile shells, and the remains of extinct animals which it contains, and for the fact admitted by Mr. Prestwitchthat these are the same as those found in the underlying gravels? It will be remembered that the loess is inundation mud, fine silt—like the "warp," spread out by the flood-tides of the river Trent over the low, bordering marshes of Lincolnshire. And when we reflect on the breaking-up of all the fountains of the great deep, and the effect of forty days and forty nights of torrential rain, we see an ample cause to account for the immense deposits of the loess. The quantity of fine particles taken up by such a flood, and carried in suspension by it, would be utterly incalculable. The gravels, and the coarser materials would, on the whole, soon be deposited; but the fine silt would be borne in suspension for a considerable time, and would not, except in caves and other favourable situations, begin to be deposited until "the prevailing waters," as they seem to have done, assumed a state of comparative quietude: for they "continued on the earth one hundred and fifty days." During this period of quiet, the mud would be thrown down in immense quantities, and would still further fill up valleys and depressions. Here, too, we have an easy solution of the examples in

which the loess is found in elevated situations. The mud deposit would be general, but, for the most part, the deposit would be comparatively thin on the higher parts of the land. Then, in this diluvial theory, we should have a solution of the land shells, and of the few human and animal remains found in the loess, which would be equally natural and satisfactory. It would mostly contain land shells, and would be likely to contain the remains of the animals whose inflated bodies would be borne by the waters of the deluge, and be deposited along with its fine mud.

Then, of course, the retiring waters of the deluge would extensively denude both this and the underlying gravel deposits, rescooping out the choked-up valleys, and where there was any shelter, or any barrier to protect them from the denuding power of the subsiding flood, leaving deep sections both of the loess and gravel. We cannot conceive of any cause so likely to spread out the immense quantity of "inundation mud" as that which composes the loess deposit, as the diluvial waters, charged, as those waters must have been, with an incalculable amount of it; nor can we conceive of any cause so admirably adapted as its retiring waters would be again to denude the lands of it, and to scoop out deep channels through its loose and soft materials. Nor should we be surprised to find that the rush of so great a body of water had, in some cases, not only swept away the loess and underlying gravel, but that it had also considerably denuded the boulder clay, and had

conveyed the debris obtained from that clay, and had, in low and sheltered situations, spread it over the loess and gravel deposits. No examples of the kind have yet been discovered. But why should not such a retiring flood wash out animal and other remains from older formations, such as the pliocene, and even miocene and eocene deposits, and mix those remains with remains of man and of the animals cotemporary with him. To suppose this is surely more reasonable than to suppose that man dates from before the glacial period, and was cotemporary with the Elephas meridionalis.

This, however, is anticipating what does not at present exist. As vet, all the mammalian remains found along with those of man, are post-glacial, and belong to the human epoch. In many limited localities, some of the mammalia might perish and become extinct during the antediluvian period, as man spread himself over the earth replenishing and subduing it. might, in distant countries, precede man by many centuries, and might thus seem to belong to an older epoch than man; and, if destroyed by man's hand, they might, in different localities, appear to have become extinct long before the flood also swept man himself 'away. They long preceded him, and became extinct before "the flood came" and interred his remains along with the bones they had left behind, some of such bones bearing marks of the very weapons by which the animals were destroyed, or of the tools by which man sought to fashion them into some implement for his use.

Then, doubtless, the flood itself would destroy many more. Of these, some few remains might be floated into caves and fissures, such as those in Malta, on the rock of Gibraltar, and the Oreston fissures, near Plymouth. The remains of others would be imbedded in the lowest gravels; and in such situations entire skeletons would occur, being soon covered up with accumulations of gravel and sand. Other animal bodies, as well as those of man, filled with gases, would float about, until entire or large portions of their skeletons were deposited in the fine mud of the loess, while perhaps the majority of such floating animal and human bodies would be carried by the retiring waters out to sea; and thus the profound ocean bottom may be the graveyard of the perished antediluvian world.

Thus, as viewed in the light of the biblical deluge, much of the perplexing phenomena presented by cave, gravel, and loess deposits, vanishes, apparent anomalies are resolved into one harmonious whole, and the deposition, organic contents, and denudation of the superficial deposits, can be consistently accounted for. The enormous periods which geologists are claiming for man and for his cotemporary animals, are all rendered needless; and the phenomena on which such periods are based, receive a clearer and far more probable solution. Theory becomes clearly consistent with fact, and the most complicated geological phenomena resolves itself into a beautiful harmony, and the whole, in the most remarkable manner, agrees and blends with the profound teaching of the inspired oracles.

We have a desolating glacial period, and a subsequent submergence of the dry land, during which "the earth" -not the sea-" became without form and void, and darkness was on the face of the deep." Then we have the stupendous upheaval, "when the waters under the firmament were gathered together into one place," and "the dry land" was made to "appear." We have the simultaneous "bringing forth" by the earth and waters both of plants and animals to repeople the renewed globe, and suited to the condition and climate of all its countries, and in many of these countries preceding man by ages. We have at the same time the creation of man, in the land forming the cradle of his race, and the rapid multiplication and spread of his different families, replenishing the earth and subduing it, before whom, as he advances, many of the mammalia perish. During a space of probably three thousand years, natural forces are operating, and, it may be, with greater energy than now, forming river and delta deposits; and then the whole is consummated by the deluge, "drowning the world," disturbing and reassorting its old superficial deposits, throwing down gravels and large blocks of stone, covering all with a fine silt or mud; and then by its retiring waters, denuding both the mud and gravel deposits, leaving them on plains and in depressions in thick masses almost undisturbed; and where, as behind barriers, the mud had been accumulated to great depths, as in the cases mentioned by Sir C. Lyell, leaving lofty sections of it; and on the sides of valleys

and on the brows of hills, leaving patches both of gravel and loess of lesser or greater extent.

Thus, the explanation we offer, has in it all the elements of an entire consistency; and has, over all other theories, this unspeakable advantage—that it is consistent with the statements of the oracle of heaven, and with the direct teaching of Eternal wisdom.

CONCLUSION.

The result not anticipated.—Man and extinct animals cotemporary.—
The Bible has supplied the key of solution.—The deluge the best solution.—Preconceived notions a hindrance.—Archæology and geology speak the same truth with Scripture.—Man's threefold history synchronises.—Coincidences based in truth.—The two records.—The mystery and beneficence of the Divine government.

Our most important, but truly grateful task is now nearly finished. The result is such as we did not at first anticipate. We commenced the investigation, thinking that the evidence might lead us to conclude that the extinct animal remains found in the same deposits with those of man, were introduced into such deposits from older formations. But both in caves and in the valley gravels, the proofs of a general contemporaneousness were so abundant, and so uniform, that we could doubt no longer. Our conviction soon became settled, that man, and all the land animals whose remains are found with his own, and which date from after the glacial epoch, all belong to one grand period. are not ashamed to own that it was the ignored Bible, the source of the highest truth and wisdom, that suggested to us the key to solve the prolonged and complicated geological phenomena which at the first presented itself to our view. From simple biblical deduction we arrived at the conclusion that the antediluvian period was probably of some three thousand years duration. This, introduced, as the Bible teaches they were, simultaneously into every country, would allow time for animals immensely to multiply themselves. Then, as man, on the contrary, had to multiply, and spread himself from one centre, the animals, for the most part, would precede him by centuries; and would be driven back, and many of them utterly destroyed, as man pressed on to "replenish the earth and to subdue it." Thus biblical deduction and geological fact were found to be in most entire harmony with each other.

Then, in regard to the age of the world, and to the spread of mankind over the face of the earth before the flood, archæological investigations lead to the same conclusion. Urged, as they were, by the command and providence of their Creator, three thousand years would afford ample time for man's widest emigrations. And the archæological facts which geology has supplied, clearly prove that the human race of the old world had widely spread itself before the flood came and took all its individuals away. Man, rude in art, but probably often gigantic in strength, and most likely, in some cases of considerable intellectual endowment, during the antediluvian period occupied large portions, if not the whole of "the face of the earth;" and has left proofs of his existence, and the monuments of his prowess, against the giants of the forest and wilderness, as well as the evidence of his moral and mental degradation, in his flint, stone, and bone implements, in many an extinct mammal, in his grovelling dwelling, and in the human victims of his altar.

Again, the deposits of our caves and valley gravels, and of the overlying loess,—to account for which, most unlikely torrential floods and unequal changes of level have been invoked, and which yet failed to explain the respective examples,-clearly pointed to the biblical deluge as their best, and, in fact, their only sufficient solution. Deposits in caves at considerable heights on the sides of cliffs and valleys; the different levels on which gravels containing, on the whole, the same fossil remains are found; and the wide extent and often lofty situations of the loess formations,—all receive a natural and easy solution, when compared with the effects which such a deluge as the biblical one would produce. many harmonies—not far-fetched, but lying on the surface, palpable and logical—inevitably lead to the conclusion that the deposits in question, on which geologists are basing so startling an antiquity, are the stupendous debris of the antediluvian epoch, consummated by the biblical deluge, the impressive monuments of a world "destroyed by a flood of waters."

It is very possible that some may feel a difficulty in receiving these conclusions, from their own pre-conceived notions respecting "man before the flood." An opinion seems almost universally to have prevailed that antediluvian man was confined to the countries adjacent to the scene of his creation. But this notion is an utterly unfounded one, and which, in time, geology will

correct, as it has done so many unfounded notions respecting the death of animals, and the work of the six days. The brief biblical account suggests no such As far as is consistent with its remarkable conclusion. brevity, it clearly teaches a wide dispersion of the hu-The Divine command given to man, to man race. multiply, and to replenish the earth, and to subdue it. would not remain a dead letter; and then we are distinctly told of a period when "man began to multiply on the face of the earth." Thus the truth of the brief but profoundly accurate intimations and statements of this oldest of all oracles, is, in the nineteenth century of the Christian era, receiving the most striking confirmation. The grand old records of geology are enabling us to decipher the little-understood record of the first chapters of the book of Genesis; and are placing the profound accuracy of the briefest statements of that book in the clearest and most interesting light. The contents of our caves, and of our widely scattered patches of gravel and mud, reflected upon by the rays of celestial truth, throw back the light on its own pages, and enable us to decipher them with an accuracy and a fulness of which the biblical critic and learned commentator never dreamed, and from which, alas, many a socalled philosopher will still turn away, preferring his own torch-light of speculation, or the beguiling ignisfatuus of his own theory, to the sure guidance of the sunlight of Divine inspiration, and to the infallible teaching of the all-wise God.

Thus, respecting the origin and unity of the human race, respecting man's antiquity and dispersion before the flood, and his destruction by it; and respecting the repeopling of the earth after the flood,—archæology and geology, as far as we can decipher their scanty fragments, speak the same language with the Bible; and when read by the aid of its light, both elucidate and confirm its own Divinely inspired pages. case do they supply facts inconsistent with its teaching. Man, ignoring the Bible, and wilfully overlooking its two grand periods of miracle—the creation and the deluge-may base, on their misunderstood facts, theories hostile to the truth of Scripture; but, as we have already seen, such theories have the gravest defects and shortcomings: and, as attempted solutions of very complicated phenomena, are unspeakably surpassed by the solutions furnished by the Bible. In fact, the evidence furnished by archæology and geology agrees far better with the revelations of Scripture than it does with the theories professed to be derived from these sciences, and which are hostile to the truth of that Scripture. They are either silent on points respecting which it has uttered its infallible decisions, or they form the echo of its voice, and repeat the lessons of its teaching.

Man's threefold history synchronises. His biblical, archæological, and geological memoria, at each important point in the progression from the creation to the deluge, strikingly correspond. In Scripture, the line may be only briefly noted; and in archæology and geo-

logy it may often seem faint and even obliterated; but whenever the three lines can be perceived, they are found to run parallel with each other, and to start from the same point in the past. In reading the geological evidence of the glacial period and of the earth's submergence, and in reading the archæological remains of India and Egypt, and of our fossiliferous caves and gravels, and the geological phenomena accompanying them, we find ourselves reading the chaos and upheaval of Scripture, its peopling of the earth with man and beast, its "world before the flood" with its simple arts but gigantic vices, its destruction of man and beast by the flood, and the effects produced by the flow and subsidence of its diluvial waters.

Such manifold coincidences cannot be the result of accident, but must have their foundation in truth. Thus, from the very phenomena supposed to be hostile to its teaching, the Bible gathers around itself a growing light, and collects fresh evidence of its profound truth and accuracy from the efforts made to show that its writers were erring, and were ignorant of historical and scientific fact.

Let the records of Scripture and the records of nature so far as all their facts are concerned, be studied and considered apart; but when we proceed to attempt to account for those facts, and to form them into theory; then let both records be admitted as evidence, and let the facts of both be received "on authority," and let the theory constructed be such as will embrace the

whole phenomena of both records, and the result will be entire harmony and correspondence, and a solution of apparently conflicting evidence, unspeakably more complete and satisfactory than any solution attempted to be based upon the facts of either record alone.

How inscrutable, but how unerring and beneficent, is the Divine government of man! He makes man's laborious studies, as well as his wrath, to praise Him. In collecting with such praiseworthy industry, and with such honest fidelity and care, the facts supplied by the glacial epoch; the proofs of submergence supplied by recent marine shells at heights of above two thousand feet above the sea: and the evidences of the existence of man and beast before the flood, furnished by our superficial deposits, our geologists—unknown to themselves—have been collecting the scattered characters of a record which is found to be a reflection of the Divine record in our Bibles. The book of nature, deciphered at the cost of so much time and labour, is proved to be a dim yet faithful counterpart of the book of Divine revelation. In fine, man's biblical antiquity is found to be the true antiquity; and the archæological and geological monuments of the past prove that he is not older than the Adamic creation.

THE END.

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